

**Centre for Business Sustainability,  
IIM Lucknow, Prabandh Nagar,  
Off. Sitapur Road, Lucknow- 226 013  
E-mail: [cbs@iiml.ac.in](mailto:cbs@iiml.ac.in) Phone: +91 522 2736987, +91 522 2736989**

## Business Sustainability News

## International

### Climate change 'will make hundreds of millions homeless'

By **Robin McKie**, science editor, for *The Observer*



It is increasingly likely that hundreds of millions of people will be displaced from their homelands in the near future as a result of global warming. That is the stark warning of

Climate change is amplifying risks from drought, floods, storm and rising seas. Photograph: Simon Maina/AFP

economist and climate change expert Lord Stern following the news last week that concentrations of carbon dioxide in our atmosphere had reached a level of 400 parts per million (ppm).

Massive movements of people are likely to occur over the rest of the century because global temperatures are likely to rise to by up to 5C because carbon dioxide levels have risen unabated for 50 years, said Stern, who is head of the Grantham Research Institute on Climate Change.

"When temperatures rise to that level, we will have disrupted weather patterns and spreading deserts," he said. "Hundreds of millions of people will be forced to leave their homelands because their crops and animals will have died. The trouble will come when they try to migrate into new lands, however. That will bring them into armed conflict with people already living there. Nor will it be an occasional occurrence. It could become a permanent feature of life on Earth."

The news that atmospheric carbon dioxide levels have reached 400ppm has been seized on by experts because that level brings the world close to the point where it becomes inevitable that it will experience a catastrophic rise in temperatures. Scientists have warned for decades of the danger of allowing industrial outputs of carbon dioxide to rise unchecked.

Instead, these outputs have accelerated. In the 1960s, carbon dioxide levels rose at a rate of 0.7ppm a year. Today, they rise at 2.1ppm, as more nations become industrialised and increase outputs from their factories and power plants. The last time the Earth's atmosphere had 400ppm carbon dioxide, the Arctic was ice-free and sea levels were 40 metres higher.

The prospect of earth returning to these climatic conditions is causing major alarm. As temperatures rise, deserts will spread and life-sustaining weather patterns such as the North Indian monsoon could be disrupted.

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### Floods, cyclones ... business and governments must wake up to disaster

By **Mark Tran**, for *guardian.co.uk*

Companies will be looking increasingly at investment opportunities in Africa and Asia in coming decades as that is where growth is strong, but for most of them the risk of disasters is unlikely to be on the radar. Steps are being taken to try to change this mindset.

In exploring investment opportunities, companies will look at political risk, access to natural resources and infrastructure. However, country briefings, analyst reports and business forecasts rarely mention disaster risk. Analysts are unlikely to mention the threat from volcanoes and tsunamis when looking at investment opportunities in, say, Indonesia.

Conversely, emerging economies will be competing to attract foreign investors by offering tax holidays and special economic zones. In the rush for growth, disaster risk takes a back seat for all parties concerned. Moreover, disasters disproportionately affect the most vulnerable people in the poorest countries.

Since 1977, the government of Thailand has granted tax exemptions and import duty reductions to companies investing in industrial activity. This attracted considerable foreign direct investment (FDI) in the 1980s, particularly from Japanese companies. The problem is that much of the



A flooded street in Oleh, in Nigeria's Niger delta, October 2012. For many companies the risk of disasters is not on the radar. Photograph: George Esiri/EPA

investment has been in the flood-prone regions of the country. In 2011, flooding in Thailand caused \$15bn-20bn (£9bn-13bn).

On the western coast of India, in Jagatsinghpur district, more than 8,000 people died in the Orissa super cyclone in 1999, but the district is being considered for the largest FDI project in India's history.

A report from the UN office for disaster risk reduction (UNISDR) last week warned that it will become increasingly untenable for governments and businesses to sweep the risk of disaster under the carpet, citing the examples of hurricane Sandy in the US, the Japanese earthquake and tsunami, and the Thai river floods.

It said economic losses from disasters have spun out of control, and called on the business community to incorporate disaster risk management into their investment strategies to avoid further losses.

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# A nudge and a nag won't end our throwaway culture

By Peter Wilby, for *The Guardian*



Richard Benyon, centre, Britain's richest MP, said families on the breadline could save £50 a month if they threw away less food. Photograph: Mark Passmore/Apex

of Bertolt Brecht, they wish to dissolve the people and elect another. That is why the nearest thing to a guiding philosophy in this Tory-led government is embodied in Downing Street's "behavioural insights unit" ("nudge unit", as it's nicknamed), which aims to persuade us to behave as ministers would wish us to.

A brief House of Commons debate last week provided a very good example. It was perhaps unfair of the Daily Telegraph to report, as its main front-page story, that Richard Benyon, an environment department minister, had advised "families on the breadline" they could save £50 a month by throwing away less food and wrapping it up "so that it keeps fresher for longer". Benyon – whose wealth is estimated by the Sunday Times Rich List at £110m, making him the richest MP in the Commons – wasn't talking about austerity, but about food waste as an environmental problem.

But the tone of the debate, introduced by Mark Pawsey, another Tory, to "highlight the importance of packaging materials in food waste", was revealing. Its entire focus was on the ignorance of consumers. "The average shopper," Pawsey lamented, "does not know how to treat different foods ... Should cucumbers be taken out of the polythene wrap? No. What should people do with cheese once they have opened it? They should put it back in a resealable pack. The lack of such knowledge is damaging the environment and, crucially, people's pockets." Benyon joined this denunciation of our sloppy domestic habits. When storing cheese and sliced meats, he said gravely, "13% of us," put them "unwrapped in the fridge".

So the government, although apparently unable to track down the billions of unpaid tax salted away overseas, is apparently fully informed about what happens inside our fridges. Let us deconstruct this a little. It is quite right for ministers to discourage waste in a world where resources are under growing strain. Food waste is not just bad for people's pockets, but also produces as many CO<sub>2</sub> emissions as one-fifth of the cars in the UK. Like all waste, however, it begins not in consumers' homes but in economic practices nurtured by unchecked capitalism. It is estimated that 60% of all food is wasted before it reaches the consumer. For a start, farmers routinely over-produce in order to ensure they can meet supermarket supply contracts. The surplus is left in the ground to rot, usually because supermarket contracts do not permit producers to trade with other retailers. Much of what is harvested will then be thrown away because it does not meet the supermarkets' rigorous aesthetic standards.

Further waste occurs during retailing. The supermarkets' aim (obviously) is to sell as much food as they can, regardless of whether anybody eats it or not. Their pricing policies are designed to that end. If the notorious "bogof" (buy one, get one free) deals have declined, other deals that make it seemingly cheaper to buy a second or third bag or packet of food have not. Often, it is not possible to buy food in anything other than large bags, including most varieties of potatoes (which can't be stored in the fridge because their starches turn to sugar).

Even if consumers get the message that most fresh produce can be refrigerated, not everybody has a sufficiently large fridge or freezer to store quantities of food over long periods. If ministers were serious about waste, they would compel supermarkets to sell produce at a single and transparent daily price

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## Tips:

About 70% of earth surface is water but most of that is saline. Just 2.5% approx planet's water is fresh of which most is in the form of icebergs and the water readily available for human consumption is less than 1.0 percent. We all know existence of mankind without water is impossible. The irony is that despite all the discussions, we are using this scarce resource recklessly. Hence it's time to act and reduce use of water. Here are some tips that may help conserving this most important natural resource.

1. While watering plants in your kitchen garden ensure that you don't over water them as that will waste water by going into drains and also may harm various plants that can't bear much water.
2. Make it a habit to pour only that much water in drinking glasses which you can drink. So that water is not wasted and the energy used for purifying, cooling etc is saved.
3. Water your lawn only when it is required. Water your lawn and plant early in the day or late in the evening that will reduce water evaporation.
4. Put a layer of mulch around trees and plants. Mulch will slow down moisture evaporation while discouraging weed growth.
5. For cleaning dirt of sidewalks and drive ways do not use water hose instead use a broom.
6. Clean your car with soapy water and use hose only while rinsing. It would be even better if you use a spray nozzle. Though it's not available freely but some waterless car washing systems have hit the market if you have access to it opt for this eco friendly system.
7. Use washing machine and dish washer only on full loads. This conserves water to a great extent.
8. While washing dishes and utensils by hand don't keep water running for rinsing.
9. While brushing teeth you need not keep water running. Just wet your brush and fill a glass for mouth rinsing.
10. Ensure that there are no leakages from pipes, joints, couplings and taps and thus save wastage of water.

## Nestle's Fairtrade Kit Kat boosts Ivory Coast farmers

*Extension of Fairtrade certification to one of UK's most popular chocolate bars provides incomes for thousands of families*

By **Jackie Wills** for the Guardian Professional Network, Guardian Professional,

The two-finger Kit Kat has become the second most popular Fairtrade product in the UK, providing an income for thousands more farmers in Ivory Coast, where more than 40% of the world's cocoa is produced.

One in four people in Ivory Coast earns a living from cocoa. Nestlé's initiative brings seven more Ivorian cocoa farmer co-operatives into the Fairtrade system.

The four-fingered Kit Kat went into UK shops with a Fairtrade mark in 2010. The Fairtrade Foundation reveals the latest move will double the company's purchases of Fairtrade certified cocoa.

As a result, 4,500 more Ivorian farmers will be paid a price that covers sustainable production and a premium to invest in community or business development projects, such as improving healthcare and schools.



Nestlé will double its purchases of Fairtrade certified cocoa, due to the success of the Fairtrade Kit Kat. Photograph: Chris North/PA

Kouame Fasseri of Kavokiva farmers' cocoa co-operative in the Ivory Coast says Fairtrade has already helped fund a new school building in his village and supports a health centre that is saving lives.

The company has been working in the Ivory Coast, one of the poorest countries in the world, for more than 50 years.

But extending Fairtrade certification to one of the UK's most popular chocolate bars is one of a number of initiatives in its supply chain. The company is committed to tackling deforestation, child labour, water use in agriculture, rural development, fisheries and animal welfare.

Nestlé has shortlisted high-priority commodities and developed sourcing guidelines. It is working with NGOs to map each supply chain in detail. In 2012, Nestlé UK & Ireland accelerated its work to track its commodity supply chains and in the same year, began sourcing 100% of its palm oil sustainably. The company is also piloting a monitoring and remediation system for labour issues in Ivory Coast.

Meanwhile, the Nestlé First Milk Sustainability Partnership, covering a UK milk supply chain of 75m litres per year, helped cut greenhouse gas emissions by 5.7% and non-livestock water usage by 5.1% in its first year.

Nearly 40% of the company's global expenditure on raw materials goes on milk, coffee and cocoa. More than 25 million farmers are directly involved in supplying Nestlé. The company regards its Responsible Sourcing Traceability programme as fundamental to change.

The Nestlé Cocoa Plan is active in the Ivory Coast as well as Ecuador, Indonesia, Ghana, and Venezuela, with plans to extend it to other Latin American countries in the future.

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## Kebony: hardwood alternative that's soft on the environment

By **Nicolette Fox** for the Guardian Professional Network, for guardian.co.uk

An award-winning alternative to tropical hardwood has been used as the building material for a new arts venue in the heart of Oslo harbour.

The striking Oslo Boathouse is made from Kebony – a sustainably sourced softwood that has undergone specialist treatment. This is to turn it into a non-toxic, durable wood with all the hallmarks of a tropical hardwood but without the environmental implications.

Norwegian architectural students have used the processed wood to build



Kebony was promoted at the Chelsea flower show using a 40-year-old stunted pine tree. Photograph: David Levene

a 21st century re-interpretation of a boathouse, which will be used as an intimate community arts venue for up-and-coming artists. The project is the third collaboration between the company, Kebony and the students.

It was designed following the annual not-for-profit architectural TreStykker workshop run by and for architectural students. The boathouse was constructed in just 14 days and was funded through in-kind sponsorship worth more than £200,000.

Kebonization is a patented process that transforms and enhances sustainable wood. This environmentally friendly process involves softwoods being injected with a formula that includes Furfuryl alcohol, a waste by-product of sugar cane production. The wood is then hardened under pressure and heat. The liquid reacts with the wood's cell walls and is permanently strengthened.

The end result is a product that resembles teak and other tropical varieties of wood. It also has a long lifespan that can withstand harsh climates – ideal for a harbourside Norwegian building. Over time, the dark wood will acquire a silver-grey patina.

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## Green Building is Mandatory in Dubai

By **SustainableBusiness.com News**

Dubai has passed a law that makes green building practices mandatory in the construction industry, and certain products, including solar water heaters will be required for all buildings.

The law goes into effect next year, and the Building Department has launched training programs to assist implementation, "Be Educated on Green Buildings." Training is being offered to all segments of the construction industry including contractors, suppliers and developers.

The Building Department is also reaching out to homeowners. In January, it held a seminar highlighting the environmental benefits of green building.

In February, the Dubai Energy and Water Authority's Sustainable Building opened, the largest public sector building in the world to achieve LEED-Platinum. The 340,000 square foot building received 98 out of a possible 110 points.

Pacific Control Systems' LEED-Platinum building in Dubai, was the first to achieve that certification in the Middle East.

Dubai is targeting a 30% reduction in carbon emissions by 2030, laid out in its Integrated Energy Strategy. The plan says solar will contribute 1% of Dubai's power by 2020, when it reaches 1 GW of capacity, and 5% by 2030.

The first phase of a \$3.3 billion, 1,000 megawatt solar park will be completed this year

[<Source>](#)



## UK government failing legal duty on air pollution, supreme court rules

*The UK faces European fines and British cities may have to ban cars to dramatically reduce harmful effects of air pollution*

By John Vidal, guardian.co.uk,



Haze over London. Photograph: Kevin Allen/ Alamy

The UK government has failed in its legal duty to protect people from the harmful effects of air pollution, the supreme court ruled on Wednesday.

The ruling by five judges –

the first time a UK court has recognised that the government has failed in efforts to meet European air pollution limits – delighted air pollution campaigners.

It means the government faces stiff European fines and British cities may have to ban cars and limit the entry of heavy good vehicles to dramatically reduce air pollution.

But because the court also ruled that the European court of justice will have to step in to clarify some legal issues, the government may be able to delay acting for up to a year.

"This landmark decision ... paves the way for the European commission to take legal action against the UK," said James Thornton, ClientEarth chief executive. "The ruling marks a turning point in the fight for clean air and will pile the pressure on the environment secretary, Owen Paterson. He must now come up with an ambitious plan to protect people from carcinogenic diesel fumes. Until now, his only policy has been lobbying in Europe to try and weaken air pollution laws."

The group's case concerned 16 cities and regions, including London, Manchester, Birmingham and Glasgow, which government plans show will suffer from illegal levels of NO<sub>2</sub>, nitrogen dioxide – until as late as 2020 or 2025.

The supreme court confirmed that because the government is in breach of the EU air quality directive, "the way is open to immediate enforcement action at national or European level". However, before deciding whether to take further action to enforce the law, it has referred a number of legal questions to the court of justice of the European Union.

The way is now open for the European commission to take infringement action against Britain without waiting for any ruling by the European court of justice. This could theoretically lead to heavy fines.

"Our assessment [has been] that the UK is already in breach of the air pollution law. We have not taken action against any country yet but we are working our way through different countries," said Joe Hannon, spokesman for EU environment commissioner, Janez Potočnik. "When we have done that we will look at the bigger picture and decide whether to take infringement action against which countries."

With the possibility of heavy fines and European commission action closer, Britain may now have little option but to come forward with ambitious new plans to reduce NO<sub>2</sub> pollution in cities. Because most of the pollution is from cars, these could include ultra low-emission zones, bans on certain vehicles and the use of technological "solutions" such as dust suppressants.

The government declined to comment specifically on the case. A spokesman for the Department for Environment Farming and Rural Affairs (Defra) said: "Air quality has improved significantly in recent decades and almost all of the UK meets EU air quality limits for all pollutants."

Stephen Joseph, chief executive of the Campaign for Better Transport, said: "The decision means the government must put public health at the heart of transport policy. In practice this should mean investing in alternatives to cars and diesel vans and trucks, especially in towns and cities. It should also call into question government plans for major new roads."

The London assembly green party member, Jenny Jones said: "This is great news for children and vulnerable people with respiratory and cardiovascular problems living in polluted environments. This judgment will hopefully spur both the government and the mayor of London to finally take effective action on tackling air pollution and get serious about traffic reduction."

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## China Agrees to Phase Out HCFCs - Important Climate Change Forcer

By SustainableBusiness.com News

The last time the world got together to implement a global environmental treaty was the Montreal Protocol, which is turning out to be our best weapon against climate change.



China has agreed to accept \$385 million to completely eliminate industrial production of HCFCs by 2030 from the Montreal Protocol's Multilateral Fund.

China is the top producer of HCFCs - industrial gases used in refrigeration, air conditioning, and insulating foams that both warm the climate and destroy the ozone layer.

Developed nations contribute to the Multilateral Fund to pay "incremental costs" for developing countries to transition from harmful HCFCs to environmentally responsible substitutes.

"The Montreal Protocol once again demonstrated how important it is for climate protection by striking a deal with China to cut the equivalent of 8 billion tons of carbon emissions - for the bargain basement price of less than 5 cents a ton," says Durwood Zaelke, President of the Institute for Governance & Sustainable Development. "This is about the same climate mitigation as all the parties to the Kyoto Protocol have achieved through the first phase of that treaty."

Eliminating these climate forcers will also protect the stratospheric ozone layer, reducing skin cancers, cataracts, and suppression of the human immune system. And it will cut air pollution, the leading cause of preventable death in China and the region.

If HFCs and other potent GHGs are eliminated quickly (black carbon, methane, ground-level ozone), **the rate of global warming would be cut IN HALF**, keeping global temperature rise under the dreaded 2°C through the end of the century - and perhaps less than that. And it would slow Arctic ice melt by two-thirds.

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## Grand Canyon uranium mining set to go ahead despite ban from Obama

*Energy Fuels Resources has federal approval to reopen its mine six miles south of the canyon's South Rim entrance*

By **Leslie Macmillan**, [guardian.co.uk](http://guardian.co.uk),



The Grand Canyon is rich in uranium deposits, and has attracted growing interest from mining firms as prices have risen. Photograph: Robyn Beck/AFP

Uranium mining on the doorstep of the Grand Canyon national park is set to go ahead in 2015 despite a ban imposed last year by Barack Obama.

Energy Fuels Resources has been given federal approval to reopen its old Canyon Mine, located six miles south of the canyon's popular South Rim entrance, that attracts nearly 5 million visitors a year.

The Canadian company says that the Obama administration's ban on new hard-rock mining over 1m acres doesn't apply because its rights date from when it closed over 20 years ago.

However, its approval is based on an environmental study the US Forest Service conducted more than 25 years ago, in 1986.

Several environment groups – including the Grand Canyon Trust, the Sierra Club and the Centre for Biological Diversity – and the Havasupai tribe filed suit in March against the Forest Service, arguing that the study is badly outdated.

Curtis H Moore, a spokesman for Energy Resources, disagrees. "The Forest Service looked at that review with modern eyes and determined that it's adequate. And 1986 was not that long ago. These are tiny mines – about 20 acres."

But Roger Clark, a director at the conservation group Grand Canyon Trust, likened the size of the mine to "a Walmart parking lot. Within that area, they will remove all vegetation and install a catchment pond, two mine shafts and a metal building. That's a fairly impressive imposition on an otherwise undisturbed landscape."

The mine poses more than just an aesthetic threat, he said. It could pollute the Red Wall aquifer, "the main source of water to the Grand Canyon besides the Colorado River. Once that aquifer is contaminated, there's no turning back," said Clark.

Moore pointed out that uranium is abundant and naturally occurring in the Colorado plateau, where the mine is located.

But Clark argues that uranium's radioactive properties only become dangerous once it is brought up out of the ground and exposed to air and water. According to the Environmental Protection Agency, such properties include radon gas, a substance that was not regulated when the government conducted its initial study of the mine in 1986. The lawsuit contends that radon and other chemicals could pollute the area.

In addition to environment impacts, the law suit argues that the mine will harm the nearby area of Red Butte, which is sacred to the Havasupai, one of the plaintiffs, as well as other tribes, including the Hopi, Zuni and Navajo.

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## Adapt faster to changing climate, Europe warned

*Cities around Europe may have to erect flood defences similar to the Thames Barrier as tidal surges become more likely*

By **Fiona Harvey**, environment correspondent, [guardian.co.uk](http://guardian.co.uk),



The Thames Barrier was planned from the 1960s and finished in the 1980s, after the disastrous sea surge and floods of 1953 that claimed hundreds of lives in the UK.

Photograph: Rex Features

Cities around Europe may have to erect flood barriers similar to the Thames Barrier that protects London from sea surges, as climate change takes hold and leads to the danger of much more destructive storms, floods, heavy rainfall and higher sea levels, Europe's environmental watchdog has warned.

The effects of climate change will be so far-reaching across the continent that vineyards may have to plant new grape varieties, farmers may have to cultivate new crops and water suppliers look to technology such as desalination in order to cope with the probable effects of more extreme weather. Buildings and infrastructure such as transport, energy and communication networks will also have to be changed.

The warnings come in a report from the European Environment Agency, called *Adaptation in Europe*. The research found that half of the 32 member countries of the EEA still lack plans to adapt to the effects of global warming, although others have begun to take action.

Jacqueline McGlade, executive director of the EEA, said: "Adaptation is about new ways of thinking and dealing with risks and hazards, uncertainty and complexity. It will require Europeans to co-operate, to learn from each other and to invest in the long-term transformations needed to sustain our wellbeing in the face of climate change."

The EEA has found that the effects of climate change are already being felt across Europe, and more is in store. Even if current efforts to cut global greenhouse gas emissions are successful, there are likely to be further impacts from a changing climate, including more frequent "extreme weather events" such as fiercer storms, heatwaves and periods of heavy rainfall. Average temperatures across Europe have risen, and there is now less rainfall in southern Europe, where much of Europe's agriculture is focused, and more rainfall in northern Europe, where it gives rise to floods.

Monday's report classes the different measures to adapt to climate change as "grey", meaning technological and engineering projects such as river or sea flooding barriers; "green" projects that are based on adapting natural ecosystems, such as changes to farming methods and crops; and "soft" measures which are categorised as policy changes, and measures such as early warning systems for forest fires. All will be needed to ensure Europe can adapt to the changes under way, and although the projects may incur upfront costs, they should result in savings over the longer term.

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## Public-private partnerships turn waste into cash

By Natalie Hummel



Many companies face a common problem: What to do with by-product or waste left over from the manufacturing process.

Smart firms increasingly are finding profitable ways of turning

waste into assets, often with the help of governments agencies, such as the U.S. Environmental Protection Agency, a promoter of by-product reuse in regions across the U.S.

A Texas wire company offers a prime example. Wire cleaning operations are messy, leaving behind for the company, which made premium wire for fencing, an unwanted by-product: sulfuric acid with bits of rust in it.

It stopped viewing the sulfuric acid as a "waste" and started seeing the iron in the acid as an "asset" it could sell to a ferrous sulfate manufacturer. Changing the waste into a raw material wasn't easy, but the wire manufacturer turned \$2.5 million in disposal costs into \$315,000 in earnings.

With the Earth's regenerative ability no longer able to keep pace with human demand, people are turning resources into waste faster than nature can turn waste back into resources. To restore equilibrium, businesses, government, nonprofits, trade associations and academia are operating more sustainably by recognizing the economic value of their waste streams.

The premise of by-product reuse or materials exchange is simple: Under-valued wastes from one company are matched and used as a feedstock stream for another company. By-product reuse creates economic and environmental opportunities by creating new revenue or savings and by reducing the use of virgin materials, energy, water and creating a reduction in greenhouse gas emissions.

These exchanges are often facilitated by local, state or regional networks coordinated by organizations that include the U.S. Business Council for Economic Development, Zero Waste Network in Austin, Texas, the Network for Business Innovation and Sustainability in Seattle, Wash., and ResourceFULL Use in Portland, Ore. The wire manufacturer cited above was facilitated through the State of Texas' Resource Exchange Network.

Businesses have many resources to draw from, including regional EPA offices. Here is how two regions are promoting by-product reuse.

### By-product reuse in the Northwest

*Metal scrap image by pan demin via Shutterstock.*

### By-product reuse in the Northwest

The Pacific Northwest Pollution Prevention Resource Center (PPRC) encourages businesses, local governments and NGOs to look beyond their traditional boundaries to pursue active exchanges for wastes.

Relying on strong community and regional partnerships, PPRC collaborated with the Zero Waste Alliance, the Columbia Corridor Association, the Department of Environmental Quality and the Portland Bureau of Planning and its clearly demonstrated that the Oregon market was ready for by-product reuse.

With grant funds from Boeing Corp., the partners and PPRC launched ResourceFULL Use, which brings together diverse businesses and organizations to identify potential by product exchanges. This network uses innovative matchmaking

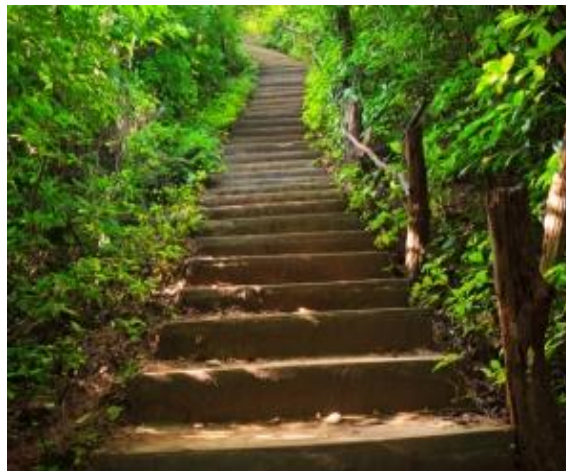
techniques, such as "speed dating," allowing participants to quickly meet and discuss opportunities. More important, the network takes a holistic approach to resource flows and offers participants technical assistance in mapping resources for their entire organization and not just a single material.

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## Why iteration over innovation leads to sustainable systems changes

By Jeff Erikson

I was at the Fortune Brainstorm Green conference last week. This annual event, where Fortune magazine "gathers the smartest people [they] know in sustainability," is a cauldron of ideas and actions focused on finding "Sustainable Solutions," this year's conference theme. There is no shortage here of big ideas.



There is no shortage here of big ideas.

Hannah Jones, Nike's Vice President of Sustainable Business and Innovation, speaking on a panel titled "Pushing the Boundaries of Green," summed up neatly what

many of us in the room were thinking when she said, "If we aren't working towards system change, we might as well go home." Unfortunately, she didn't reveal to us the magic formula for changing the system.

When we think and talk about system change, we often default to thinking only about dramatic and abrupt changes to the status quo, driven by a visionary individual. However, system change, like systems themselves, is a mosaic of many actions by many individuals, companies, governments, NGO's and others. And like a mosaic, the sum of these actions, and their proximity to each other, create the picture of system change. When viewed in isolation, any single piece in a mosaic may appear inconsequential. But each is nonetheless essential for the full picture to be realized.

A couple of years ago at this conference, one speaker noted that "transformation occurs incrementally." Indeed, when we look back on the history of human achievement, we can see that transformation is a result of many small improvements that build upon each other, punctuated occasionally by step changes in technology, beliefs or behavior.

The iPhone is often held up as a device that has transformed the way we live, but as was noted yesterday by Tony Fadell, the "father of the iPod" and currently CEO of Nest, it took seven years to get from the debut of the iPod to the debut of the iPhone. In between were many incremental improvements by Apple and by others. The iPod itself was an iteration of other portable digital music storage devices.

Since I joined SustainAbility 11 years ago, I have seen -- and been a part of creating -- many corporate sustainability strategies. Those that have been most effective at driving change have a big idea -- a transformative change -- at their core. But they also drive and celebrate incremental improvement, not as a substitute for transformation, but as an essential element of it. Recently SustainAbility and GlobeScan released its annual Sustainability Leaders Survey. Unilever once again came out on top, followed by Patagonia, Interface, Walmart and GE. Each company combines a compelling vision and robust strategy with strong performance and evidence of integration -- big ideas plus incremental improvements.

*Stairway photo by Ikuni on Shutterstock.*

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## Mount Everest's glaciers shrinking at increasing rate, say researchers

By Jason Burke, for The Guardian



Researchers say they suspect that the decline of snow and ice in the Everest region is a result of changes in global climate. Photograph: Rafal Belzowski/Getty Images

Global warming is melting snow and ice on the world's highest mountain at an accelerating rate, researchers have claimed.

A study by a team led by a Nepali scientist at the University of Milan has found that glaciers on or around Mount Everest have shrunk by 13% in the last 50 years with the snow line 180 metres higher than it was 50 years ago. The glaciers are disappearing faster every year, it says.

The 60th anniversary of the first ascent of the 8,848 metre (29,028ft) peak by Sir Edmund Hillary and Sherpa Tenzing Norgay will be celebrated next week.

The researchers say they suspect that the decline of snow and ice in the Everest region is a result of changes in global climate caused by human-generated greenhouse gases. However, they have not yet established a firm connection, Sudeep Thakuri, who led the team, said.

The landscape around Mount Everest has changed dramatically since the world's highest mountain was first climbed. Mountaineers now report more rock and less snow and ice on well known routes. The ends of glaciers around the peak have also retreated by an average of 400 meters since 1962, the new research found, and some smaller glaciers were now nearly half the size they were in the 1960s.

The researchers used satellite imagery of the peak and the 713-square-mile Sagarmatha national park around the mountain as well as long-term meteorological data.

Small glaciers of less than a square kilometre (about 247 acres), are vanishing fastest, registering a 43% decline in surface area since the 1960s, Thakuri said.

Specialists in Kathmandu said the rate of change through the Himalayas was variable. Though clear in places such as Nepal, at the eastern end of the chain, the situation was different in Pakistan and further west, said Arun Shrestha of the International Centre for Integrated Mountain Development in Kathmandu.

"The glaciers are in retreat but rates are different," he said. "It is quite rapid in the east Himalaya but in the west some are advancing while others are in retreat."

Other research suggests the ice of the main Khumbu glacier which flows down from Everest is less thick than it was previously.

The issue of the future of glaciers in the Himalayas is highly controversial. A United Nations report in 2007 included a false claim that the Himalayan glaciers would disappear by 2035.

Though all say there is a change, scientists working in the field urge caution over any estimates, saying data is insufficient especially when looking at a small area.

"It is very difficult to scientifically say what are the trends on one particular mountain," Shrestha said.

The impact of climate change on the Himalayas will have consequences across south Asia and beyond. Rivers such as the Indus, Ganges and Brahmaputra depend to some extent on seasonal glacier melt. Countries across the region are already suffering acute water shortages.

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## Are plastic jars worse for the environment?

By Lucy Siegle, for The Observer

We are told to avoid sweating the small stuff. But I say no, sweat the small stuff all you like. The small stuff cumulatively becomes big stuff. The average household buys 4,000 packaged products a year, including food. If each of those products comes in a single-use, poorly packaged receptacle – a mix of copolymers which can't easily be recycled – then that's 4,000 bits of extra pollution.

Packaging has a lot of jobs: avoiding waste, guaranteeing that products are tamper free, marketing and making sure it's "shelf-ready" for all-powerful supermarkets. (Why not read the downloadable brochure *Why Products are Packaged the Way They Are?*)

Perhaps the apposite question is: why don't they package the way they used to? Many brands claim they're being greener by shifting into some new fancy-pants type of plastic (as opposed to saving money). Glass is inert and straightforward (it is essentially sand, soda ash and limestone) and keeps products fresh without plastic



Heart of glass: PET plastic jars produce five times more greenhouse gas emissions than glass. Photograph: Sarah Lee for the Guardian

films and barriers. It is also highly recyclable – scrap glass, cullet, is a key production ingredient for new glass. But can manufacturers trust us to recycle glass? They argue they are better off controlling things further up the supply chain.

You ask for a straight comparison: using basic material intensity figures, a PET (a thermoplastic polymer resin) jar versus a glass one uses twice as much abiotic material (minerals and fossil fuel) to produce and 17 times more water (predominantly from cooling power plants) and produces five times the greenhouse gas emissions. That is a win for glass only when you look at localised systems. Everywhere else you need to factor in "trucking" vast distances, so the material intensity figures must be multiplied by truck miles, at which point the lightest wins. A PET jar shipped 1,000km in lieu of a glass jar saves 19g of CO<sub>2</sub>e (carbon dioxide equivalent). But it's even more skewed than this. PET is often recycled while other oily, discarded weird plastics are welcomed to the 12% of UK regions that have invested in Energy from Waste centres (cynics may call these incinerators) to be used as fuel.

I urge you to remain a glass purist. While it's hard to stem the rising tide of plastic packaging, plastic waste – from bottles to the tiny beads called mermaid's tears – is wreaking havoc on oceans especially. Nothing against PET, the most widely used and recycled plastic... but glass wins for me.

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## Arup helps PwC build towards a greener future

By **Jackie Wills** for the Guardian Professional Network, for [guardian.co.uk](http://guardian.co.uk)



Global design firm Arup has identified more than 70 ways to cut the emissions from PwC's UK properties, which will mean halving the accountancy firm's carbon footprint by 2017.

Arup's initiatives range from small-scale changes in major refurbishments to proposed renewable energy technologies for PwC's entire property portfolio.

Its propositions have emerged from detailed property reviews and energy performance audits, which have identified the long-term potential to cut carbon. Arup is also advising PwC on buildings it is considering buying.

PwC cut the carbon footprint produced by its UK buildings by more than 25% between 2007 and 2012 and aims to make another 25% cut by 2017 – setting itself the ambitious goal to halve carbon emissions in 10 years.

To achieve this target, PwC will have to challenge conventional thinking about energy consumption. Throughout 2012 it has been installing LED lighting and voltage optimisation systems and is focusing efforts on improving its flagship building at 7 More London. PwC will use lessons learned at 7 More London to cut carbon at its Embankment Place offices by 40%.

The partnership with Arup has enabled PwC to adopt a bold strategic approach to energy consumption. Arup's multi-disciplinary team includes specialists in carbon reduction strategies, building performance experts with experience of carbon reduction programmes, quantity surveyors and financial analysts. Arup's tools enable the company to identify buildings with the greatest potential for successful upgrades and conversions.

Figures show PwC is making steady progress. The carbon intensity of its UK estate went down from 208kgCO<sub>2</sub>/m<sup>2</sup>/yr in 2007 to 151 in 2011. In 2012 carbon was cut again by 9% to 138kgCO<sub>2</sub>/m<sup>2</sup>/yr, winning the firm Carbon Trust Accreditation and the BSI 50001 standard for energy management.

And PwC's blueprint for a greener business is achieving results in other areas too. In 2012, for example, none of its buildings dispatched waste to landfill.

[<Source>](#)

## Best Foot Forward makes huge strides in carbon reduction

By **Nicolette Fox** for the Guardian Professional Network, for [guardian.co.uk](http://guardian.co.uk)

Today, it is hard to imagine a world without the carbon footprint. Footprints have been worked out for many different sectors – from food to pharmaceuticals. There is even a footprint of Radiohead's US tour. And yet it was only 16 years ago that a UK consultancy was at the forefront of developing this concept.

Best Foot Forward is an Oxfordshire consultancy that has pioneered both the theory and practice of ecological footprints. It was awarded the Queens Award for Enterprise for its work in this area.

One of its more recent high-profile projects was supporting London 2012 to becoming the greenest Olympic Games ever, by developing a carbon management strategy that avoided 400,000 tonnes of carbon.

The methodology developed by the company for the London Olympics, has raised the sustainability bar for future world-class events.

The firm is being used for a number of other major international sporting events including the Rio 2016 Olympic and Paralympic Games, the 2014 FIFA World Cup in Brazil, the Sochi 2014 Winter Olympic and Paralympic Games and the 34th America's Cup.

The company has also been instrumental in helping the Heritage Lottery Fund (HLF) to become the first major UK funding body that requires all large projects to undertake carbon footprinting as part of their applications.

With so many projects involving building expansion and a growth in visitor numbers, HLF felt that calculating the environmental impact of projects should form part of its decision-making process.

The funding organisation will now ask all applicants for projects of more than £2m that make it through to the second round, to work out a carbon footprint.

Best Foot Forward worked with HLF to provide applicants with a tool that can help them calculate the carbon footprint of their projects, based on utilities consumption and visitor travel.

The footprinting tool will also help applicants determine the impact of making



400,000 tonnes of carbon were avoided at London 2012, due to Best Foot Forward's efforts. Photograph: Steven Paston/Action Images

changes to achieve reductions in carbon emissions through energy efficiency, better buildings and renewable energy, as well as by encouraging visitors to switch to public transport, walking or cycling.

Another project will involve Best Foot Forward working on a research programme looking at the UK soft drinks sector. The company will examine the entire soft drinks supply chain, from raw material production to end-of-life. It will look at production and consumption, as well as carbon emissions, resource efficiency and socio-economic issues.

The footprinting company has also been commissioned to design an online version of the popular Cool Farm Tool for the agriculture industry.

The tool offers farmers a simple and free way to measure the impact of their crops and animal products. It helps farmers understand where their environmental hotspots are, and the different scenarios for reducing emissions.

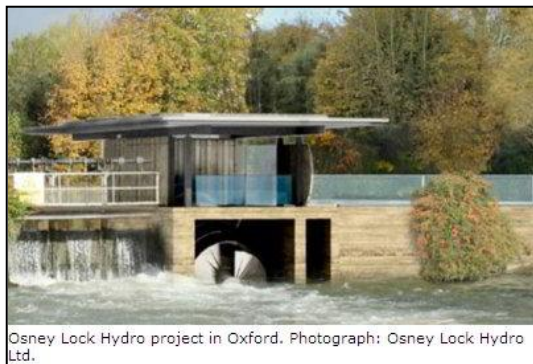
By helping growers directly, the tool also helps multinational companies to manage the emissions from their supply chains. Many manufacturers and retailers are setting ambitious targets to reduce greenhouse gas emissions, and agriculture is often a key part of their carbon footprint.

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## How are communities raising serious money for green energy projects?

By **Chris Goodall**, for *guardian.co.uk*



This month a hydro project to generate electricity at a weir on the Thames in Oxford nearly £300,000 from 95 shareholders, three quarters of whom live in Oxford, within two weeks of opening its offer. Just a few weeks ago, the village of South Brent in

Devon financed a large wind turbine almost entirely with local money.

Green energy projects owned by communities – long-talked about as a way to reduce emissions, cut bills and bring people together – are starting to raise serious amounts of money. But how?

Saskya Huggins, one of the volunteers who has organised the Osney hydro project in Oxford, said “when you get an opportunity like this that helps tackle a major global issue, albeit in a small way, and raises significant funds for your own community, you grab it with both hands.”

The two ventures share many features. Both had a core group of utterly committed volunteers like Huggins working for many years to bring the project to fruition. The Osney hydro plant has been in development for over a decade. South Brent's team got planning permission three years ago but took until the late 2012 before being able to start fundraising.

In both places, the organisers are well known and trusted in their local community. This seems to have helped build the impetus behind the fundraising.

Charlotte Robinson, one of the Osney Hydro investors, said: “When I came to Oxford 10 years ago, this idea was reported in the local newspaper and I loved it, but I couldn't see how such a big project could happen in such a small area. So I've been thinking about this for a decade, and was determined not to miss the boat. This sort of action gives me hope that a climate change revolution really is possible, even for non-leaders like me, by doing things from the bottom up and locally. I feel incredibly lucky to be able to take part.”

Edward Chapman, one of the Devon organisers, actually discouraged publicity outside the area, saying he wanted to make sure as much money as possible came from individuals living close to the turbine.

He remarked on how early publicity for share issue had galvanised more support from local people. “The team of volunteers who assembled after the first open meeting back in January did an amazing job – the village was covered in banners and posters and they opened the ‘pop-up’ shop for a week.”

The two schemes independently decided to offer investors an annual return of about 4% on their investment. This leaves large surpluses available for local schemes to reduce fuel poverty and meet other energy priorities within the community. Osney says it will put a total of £2m into energy projects in West Oxford during the 40 year life of the hydro plant, more than three times the initial cost of the scheme. South Brent has its eye on using the money from the wind turbine to provide the seed funds for its own large hydro power scheme as well as insulating local homes.

The volunteers that have driven the two schemes forward were already experienced renewable energy investors. The Osney group had raised the money to invest in several large solar photovoltaic arrays on local buildings while one of the South Brent directors had rebuilt some of the village's small electricity-generating water wheels and another works as a surveyor for a large renewable energy company.

In South Brent about 130 people put money into the wind turbine from a village population of only 3,000. Although other Devon wind turbines have been fiercely resisted – including some planned by other community groups – few voices were ever raised against the proposal. At Osney, over half the money came from less than a mile from the weir at which the generating plant will be built.

The average amounts invested were broadly similar in both cases. The Thames scheme raised an average of just over £3,000 per investor compared to £2,300 in Devon. All the Osney shareholders are individual people. A few companies and trusts invested in the South Brent wind turbine – usually buying relatively few shares – but over 95% of the investors are individuals.

The big brother of these two ventures is the Westmill Solar cooperative, which raised £4m from 1,600 small shareholders in the summer of last year to buy an existing solar farm near Swindon. The profile of the investors is similar to the two newer schemes. At £2,500, the average investment is about mid-way between the Osney and South Brent figures. Three quarters of the Westmill investment came from within 25 miles.

The experience in Germany shows what might be achieved by encouraging such community power companies.

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## Making water from air: a collaboration between engineers and marketers

By **Flemmich Webb**, for *guardian.co.uk*

Advertising is everywhere. Some people enjoy it; others find it an insidious attempt by brands to brainwash us into consuming more. But, whatever your view, there's no denying advertising has the power to shape the behaviour of individuals, groups or even society in general. And that power can be harnessed to positive effect.



Lima is the world's second largest desert capital and about one million people don't have access to clean drinking water. A new billboard which generates water from humidity is attempting to change this. Photograph: Mayo DraftFCB

The University of Engineering and Technology (UTEC) is based in Lima, Peru. Last year, staff began thinking about designing an advertising billboard to encourage students to enroll for the 2013 academic year. They approached advertising agency Mayo DraftFCB with the brief.

Alejandro Aponte, Mayo DraftFCB's creative director, takes up the story. “I started brainstorming with my co-creative director Juan Donalisio and we came up with the idea of showing these young students, through a real-life example, how engineering can offer a solution to real-life problems.”

The real-life problem he alludes to is the lack of potable water in the region. Lima is the world's second-largest desert capital and about one million people don't have access to clean drinking water. The area receives just 0.51 inches of rainfall a year and residents often have to rely on other sources for their water.

“Here in the Bujama district, most of us draw water from the well,” says Francisco Quilca, a Bujama resident, speaking in a UTEC video about the billboard. “It's not nice and it's polluted.”

The solution, devised and delivered by the two organisations, is a billboard that generates drinking water from moisture in the air around it – annual rainfall may be low but the atmospheric humidity is about 98%.

The billboard contains five generators that condense the moisture in the air to obtain bulk water. The air passes through a series of filters, including antistatic agents, activated carbon, minerals and reverse osmosis.

The condensed water then flows under UV lamps for further purification and is collected in a tank from where it is dispensed. Sensors monitor the collector tank to avoid water shortages or excesses.

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## Coca-cola: cutting carbon in factories, fridges and flavourings

By Jackie Wills for the Guardian Professional Network, for [guardian.co.uk](http://guardian.co.uk)



Coca-cola has set up three separate groups to help reduce its carbon footprint. Photograph: Justin Sullivan/Getty Images

The carbon footprint of a can of Coke is shrinking. Coca-Cola Enterprises (CCE) is making coolers more efficient, its factories in the UK, France and Belgium are reaching higher energy standards and it is refusing to buy fridges that use hydrofluorocarbons, the super greenhouse gases.

The company has promised

to reduce the carbon footprint of a drink by a third by 2020. It is achieving that target through carbon governance that covers every aspect of the business, from fridges to flavourings.

CCE has three separate groups working on the carbon footprint of one of the world's most famous soft drinks. An energy and climate change steering group oversees the task of cutting emissions in factories, transport and refrigeration, another group focuses on packaging and a third on ingredients.

In its factories CCE is on the alert for new energy efficient technologies and using renewable energy sources, like the sun. Cooler teams are fitting doors on units that were previously open-fronted, installing LED lighting, as well as devices to shut off lights and turn down the temperature when a cooler is not being opened regularly. The company is also helping suppliers plan their own carbon reduction strategies.

Over the past few years, CCE has managed to disentangle its carbon emissions from business growth. In 2011, the company cut its carbon footprint by 8.4% on the previous year even though the business grew in volume by 3.5%. Provisional figures for 2012 promise a continuing cut in the carbon footprint.

CCE received the highest ever score of 95% in its Carbon Trust Standard assessment in 2011 and was recognised as one of the leading performers in carbon management by The Carbon Trust in 2012. CCE's strong 2012 carbon disclosure saw the company listed for the first time in the 2012 Carbon Disclosure Project Leadership Index.

[Source](#)

## David Attenborough opens Essex nature reserve built on London's waste

By Robin McKie, science editor, for *The Observer*

Thurrock Thameside nature park has the look of a classic wildlife reserve. Perched on the Essex coastline on the Thames estuary, it covers 120 acres of grass, bramble and shrub. It is home to barn owls, brown hares, harvest mice, great crested newts, yellow wagtails, reed buntings, adders and various orchids. It is, in short, a haven for nature lovers.

The site has one unusual feature, however: it rests on a thick bed of rubbish and domestic waste that has been dumped by six London boroughs over the past 50 years and which, in places, has piled up to form layers that are 30m thick. It is a strange bedrock for a nature reserve to say the least.

It is a certainly remarkable transformation. And yesterday, the Essex nature park – awarded an ethical award



Tarnya Carter and John Hall of the Essex Wildlife Trust, at Mucking Landfill Site which is being transformed into a wildlife habitat and public park. Photograph: Murdo MacLeod

by the *Observer* in 2011 – was given a great accolade: Sir David Attenborough conducted the official opening. "We live in a crowded country and need to respect its limits to sustain us," he said at the opening ceremony. "Change like this must become the norm."

This point was backed by John Hall, chief executive of Essex Wildlife Trust, which has played a key role in turning the giant rubbish dump into a wildlife refuge. "This was an old gravel pit and once excavations were finished it was used as a vast dump for London's domestic rubbish," he said. "Every day, barges of the stuff were brought up the Thames and dumped. The only wildlife we had were gulls – thousands of them. They used to go through the rubbish for food. They would drag waste out then spread it round the area. Local people would find they had dropped rotting chicken bones in their garden."

It was a very different vision yesterday. Skylarks – whose numbers are declining alarmingly elsewhere – were singing while several adders were spotted by visitors. "Adders are very shy, which suggests there is now a healthy population at Thurrock," Hall said. "That in turn, indicates healthy numbers of their prey, creatures such as voles. The presence of these animals also explains significant numbers of peregrines and barn owls."

But creating this haven from a rubbish tip – carried out by the wildlife trust and the landfill company Cory Environmental – has not been easy. First the rubbish had to be compacted. Then a thick layer of clay, known as a pie-crust, was placed over this vast sea of waste. This has since been covered in soil on which grass, bushes and wildlife have established themselves.

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## Street lamps in Scotland could switch to 100% low-energy bulbs

Ministers unveil plans for the green investment bank to fund a Scotland-wide LED lighting programme

By Severin Carrell, Scotland correspondent, [guardian.co.uk](http://guardian.co.uk),

Every street light in Scotland could be fitted with low-energy LED bulbs as part of ambitious plans to cut CO2 emissions, ministers said on Thursday.

The Scottish government unveiled proposals for the green investment bank (GIB) to fund the Scotland-wide LED lighting programme as part of a £500m package of climate and green energy measures.

LED street lights, which are being piloted by several Scottish councils and are already in use by a number of English local authorities, were floated by Alex Salmond, the first minister, in a meeting with the GIB chair Lord Smith of Kelvin on Wednesday. On Thursday, the bank posted data for the first time on its initial 11 investments totalling £635m, with a total value of £2.3bn once private investment was counted.

Scottish government officials admitted they did not know how many street lights were involved, or the eventual CO2 savings or the total cost of this programme, arguing that the project was in its early stages.

But the environment group WWF Scotland said its figures suggested that street lighting caused a significant amount of carbon emissions. The 40,000 street lights in Aberdeenshire are responsible for 8,750 tonnes of CO2, with energy bills hitting £1.6m, it said. Five council's street lights made up 10% of its total carbon footprint.

Richard Lochhead, the Scottish environment secretary, said that the investment quango the Scottish Futures Trust had estimated that investing about £350m in low-carbon measures could cut energy bills by £900m.

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Street lights in front of Castlegate in Aberdeen, Scotland  
Photography: Alamy



## Meteorite crater reveals future of a globally warmed world

By **Damian Carrington**, for *guardian.co.uk*



Satellite view of lake El'gygytyn the largest unglaciated deep lake in the Arctic, located in central Chukotka, in north-east Siberia, Russia. Photograph: Landsat 7/NASA

The future of a globally warmed world has been revealed in a remote meteorite crater in Siberia, where lake sediments recorded the strikingly balmy climate of the Arctic during the last period when greenhouse gas levels were as high as today.

Unchecked burning of fossil fuels has driven

carbon dioxide to levels not seen for 3m years when, the sediments show, temperatures were 8C higher than today, lush forests covered the tundra and sea levels were up to 40m higher than today.

"It's like déjà vu," said Prof Julie Brigham-Grette, at the University of Massachusetts Amherst, who led the new research analysing a core of sediment to see what temperatures in the region were between 3.6 and 2.2m years ago. "We have seen these warm periods before. Many people now agree this is where we are heading."

"It shows a huge warming – unprecedented in human history," said Prof Scott Elias, at Royal Holloway University of London, and not involved in the work. "It is a frightening experiment we are conducting with our climate."

The sediments have been slowly settling in Lake El'gygytyn since it was formed 3.6m years ago, when a kilometre-wide meteorite blasted a crater 100km north of the Arctic circle. Unlike most places so far north, the region was never eroded by glaciers so a continuous record of the climate has lain undisturbed ever since. "It's a phenomenal record," said Prof Peter Sammonds, at University College London. "It is also an incredible achievement [the study's work], given the remoteness of the lake." Sixteen shipping containers of equipment had to be hauled 90km over snow by bulldozers from the nearest ice road, used by gold miners.

Previous research on land had revealed glimpses of the Arctic climate and ocean sediments had recorded the marine climate, but the disparate data are not consistent with one another. "Lake El'gygytyn may be the only place in the world that has this incredible unbroken record of sediments going back millions of years," said Elias. "When you have a very long record it is very different to argue with."

The new research, published in the journal *Science*, also sheds light on a crucial question for climate scientists: how sensitive is the Earth's climate to increases in carbon dioxide in the atmosphere? The relative slowing of global temperature rises over the past 15 years has led some researchers to suggest the climate is less sensitive to CO2 rises than current climate models suggest. But the record from Lake El'gygytyn of a very warm Arctic when atmospheric CO2 levels were last at about 400 parts per million (ppm) indicates the opposite, according to Brigham-Grette. "My feeling is we have underestimated the sensitivity, unless there are some feedbacks we don't yet understand or we don't get right in the models."

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## Oil demand in developing nations overtakes industrialised world

By **Fiona Harvey**, environment correspondent, for *guardian.co.uk*

Developing countries have overtaken the industrialised world for the first time in their thirst for oil, according to the world's leading energy authority.

This transformation in the demand for oil has come as production of the fuel has boomed in the US, "sending ripples through the global markets", the International Energy Agency (IEA) said on Tuesday.

Shale oil – the technique of blasting apart dense rocks under high pressure to release fossil fuels trapped within – has rapidly boosted oil production in the US, presaging a revolution in oil to mirror that in gas production.

The US pioneered shale gas production in the past decade, resulting in a gas glut in the country that has sent gas prices plunging and led to a massive switch from coal to gas for electricity generation.

As with shale gas, the newfound oil supplies are likely to be used first to slake demand for fuel in the US's home market, making the economy – previously the world's biggest oil importer – less dependent on overseas supplies.

Those supplies are increasingly flowing to Asia.

At the same time, developing countries are massively increasing their capacity to refine crude oil, which is changing the pattern of trade and is part of "a broad restructuring of global refining capacity". The IEA said this would result in a continued squeeze on European refiners, caused by increasing US product exports and the new Asian and Middle Eastern refineries.

The IEA said that the shift would "not only cause oil companies to overhaul their global investment strategies, but also reshape the way oil is transported, stored and refined". In addition, the same techniques that have been brought to bear on shale gas in the mainland US could be transferred to depleted conventional oilfields, opening up new possibilities for extraction.

The US is likely to overtake the Organisation of the Petroleum Exporting Countries (Opec) as the world biggest source of oil within about five years, the IEA said last year. But Opec is still an important bloc, the agency said.

The vast expansion of oil production that could follow the US shale oil boom also spells bad news for emissions. The IEA has warned that on current trends, the world is in for 6C of warming, a level scientists warn would cause chaos.

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## Countries Finding New Ways to Address Climate Change

By *SustainableBusiness.com News*

Over the past few years, we've seen every international climate summit fail to produce a binding treaty on climate change. The issues always remain the same – developing versus advanced nations and their respective obligations. It seems that a new approach is emerging now. Rather than forcing every country into one scheme, let each country decide how they want to address the situation and support them in achieving their goals.

That's what the US proposed in the latest international meeting in Bonn, which took place last week. Negotiators are meeting several times a year to prepare for the next big summit in 2015, where world leaders have promised to sign a treaty. Todd Stern, negotiator for the US, proposes that each nation create its own plan, which would encourage all countries to come to the table. "Countries, knowing that they will be subject to the scrutiny of everybody else, will be urged to put something down they feel they can defend and that they feel is strong," he says.

Countries would submit initial plans several months before the 2015 meeting, giving time for review, feedback and revision.

"It is very hard for us to imagine a negotiation with dozens and dozens and dozens of countries actually negotiating everybody else's targets and timetables," he told reporters.

Stern says the idea is gaining traction, and the World Bank has begun a similar, parallel effort.

The World Bank has formed the "Partnership for Market Readiness," which helps countries meet emissions targets as quickly as possible.

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## Goodbye nuclear power: Germany's renewable energy revolution

By **Tim Smedley**, for *guardian.co.uk*

To many a casual observer, Germany's reaction to the Fukushima disaster seemed knee-jerk to say the least.



A wind turbine spins behind a new biogas plant in Lower Saxony near Ebendorf, Germany. The plant processes natural waste from local farms into electricity, heat and environmentally-friendly fertiliser. Photograph: Sean Gallup/Getty Images

Nuclear power produces nearly 20% of Germany's energy, but in July 2011 (only three months after Fukushima) the German government vowed to shut down its nuclear capability within 10 years. Not just that, but to replace it with renewable energy, cut greenhouse gas (GHG) emissions by

40% by 2020 and 80% by 2050, ensure renewables contribute 80% of Germany's energy by 2050, and ensure energy consumption drops 20% by 2020 and 50% by 2050. It even has its own word: 'Energiewende', or 'Energy Transformation'. And Angela Merkel, not known for hyperbole, has described it as a 'Herculean task'.

### Energiewende: persuading the public

But Professor Dr Manfred Fischedick is not a casual observer. As vice president of the Wuppertal Institute, he is scientific adviser to both policy makers and industry. Energiewende, he says, didn't simply fall from the sky in 2011. "Discussions about Energiewende had started already in the 1980s", says Fischedick. "There is a long tradition here in talking about alternative energy transformation. We had a lot of good scientific background and a very good basis for the government to come to such decisions in a very short time-frame... Just three months' discussion for such an ambitious energy concept would not have been possible without that."

Discussions are one thing. The reality, however, is proving quite another. "Now we have to construct new power lines, now people will see new biomass facilities very close to their houses, they will see new wind farms... the [crucial] social challenge is really to get public acceptance for all these many new investments."

The sight of thousands of kilometres of power cables slicing through the German countryside, and the costs involved, are beginning to bite. A renewable energy surcharge has already seen the average family's energy bill increase by 47% in the past two years.

There are also question marks over the transportation and storage of intermittent wind energy. However, Fischedick argues that, "90% of the technologies are already available... our analysis is we [will need] more long-term storage systems after 2030. That's not a short-term challenge it is more of mid-to-long term. The short-term challenge is how to realise appropriate infrastructure on the electricity grid side... the main question at the moment is how we will be able to construct and get public acceptance for new power lines."

### The prosumer model

While a lot of the media attention has been focused on large-scale wind farms (and Fischedick expects wind power to contribute half of the 80% renewable energy target by 2050), one of the most fascinating aspects of Energiewende is how it embraces micro-generation and micro-ownership. Public acceptance is, says Fischedick, much easier to maintain if it is paralleled with levels of individual ownership. Also known as a 'prosumer' model, over 50% of renewable-energy capacity is owned by individuals or farmers in Germany; the Big Four energy companies own just 6.5% (according to 2010 figures). "This is PV, co-generation... really small facilities," says Fischedick. "The prosumer aspect is vitally important... if you only have the chance to look from outside at the changes then you are much more [likely to be] complaining about what is going on."

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## Northumbrian Water: serious about sewage

By **Nicolette Fox** for the *Guardian Professional Network*, for *guardian.co.uk*

With three million customers Northumbrian Water has to deal with an awful lot of sewage every year. But after investing in leading-edge technology to clean up its waste, the company is now saving more than £6m in electricity costs annually, as well as cutting its carbon footprint by 20%.

Northumbrian Water did this by being the first UK water company to turn 100% of its sewage sludge into renewable energy. In other words, it's turning poo into power.

The company has more than 400 sewage treatment works, all of which produce sewage sludge as a by-product associated with the cleanup process.

Until 2007, the company's sludge treatment focused on sludge-drying or dewatering with lime stabilisation. While the end product was suitable as an agricultural fertiliser, it came with a high price tag. The method was both highly energy and highly carbon intensive, as well as being expensive.

In 2006, the company made a radical decision. After looking at several different options it decided that moving to an Advanced Anaerobic Digestion (AAD) system would generate significant environmental benefits, together with multimillion pound savings in annual energy costs.



The sewage that ends up down our drains is being turned into renewable energy. Photograph: Andrew Fox/Alamy

Over a four-year period, Northumbrian Water built two AAD plants costing £75m. The first opened in 2009 at Bran Sands on Teesside, and the second in 2012 at the company's five-acre sewage treatment works at Howdon on Tyneside.

Many water companies use conventional anaerobic digestion to deal with sewage sludge, but it's the "advanced" element of AAD that is key to its high energy efficiency.

Sludge is loaded into pressurised reactors and heated to 165°C at 6Bar. By creating extreme conditions, the biological cell structure within the sludge is destroyed, thus releasing more nutrients for energy conversion. This is similar to when a domestic pressure cooker gets to steam.

The sludge is then depressurised and cooled before being fed into large concrete digesters for the bacterial process to start. Methane given off by the bugs digesting the waste will then be collected in biogas storage bags before being used to fuel gas engines to create renewable electricity. Any waste heat is also reused within the AAD process.

The result is that 100% percent of the sludge is used to produce renewable electricity. There is only a small amount left over when the process is complete – a mere 150,000m<sup>3</sup> of sewage sludge compared with 2,000,000m<sup>3</sup> under the old system.

The remaining sludge "cake that is produced has been turned into a valuable agricultural fertiliser. It is a class A biosolid – a low-odour product containing no detectable levels of pathogens, such as E coli.

By utilising AAD, Northumbrian Water has transformed its sewage treatment process from an energy intensive waste clean-up process, to one that recovers significant quantities of renewable energy. Today, nearly three quarters of the energy required for the company's sewage treatment is met by this source.

Northumbrian is currently the only UK water company to convert 100% of its sewage sludge into renewable energy. This has resulted in the company also having the lowest carbon emissions per customer among the water companies.

One reason it's so successful is the fact that, unlike many other water companies, it has situated its key sewage sludge treatment plants at just two sites. Due to the cost of an advanced anaerobic digestion plant it is only economical for concentrated, large scale use.

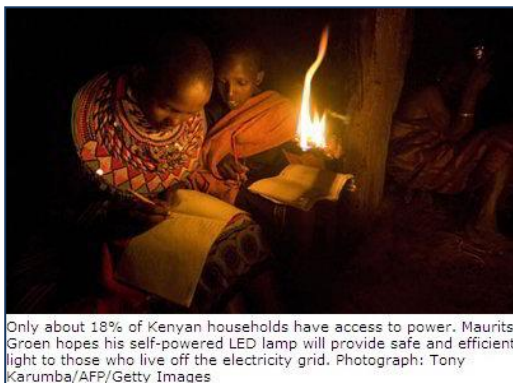
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## Sustainability consultant turned entrepreneur stresses stories sell

By **Oliver Balch**, for *guardian.co*.

Sustainability consultants are two a penny these days. What the world lacks are sustainability-minded entrepreneurs. Maurits Groen, a 59 year-old Dutchman, spent nearly 30 years in the first camp before he decided it was high time to roll up his sleeves and get his hands dirty.



Only about 18% of Kenyan households have access to power. Maurits Groen hopes his self-powered LED lamp will provide safe and efficient light to those who live off the electricity grid. Photograph: Tony Karumba/AFP/Getty Images

"Since the [sustainability] problems are really getting very acute and intense, I thought I should start doing something about them instead of only consulting about how others should do things better", he says.

### A low-cost light revolution

The result is the award-winning WakaWaka Light. Based on the Swahili word for "shine bright", this low-cost LED light is revolutionising life for thousands of families in the developing world. It lasts longer (up to 50 times more than a standard incandescent light), it's hugely more efficient (its light-to-heat energy ratio is 9:1, compared to about 1:9 in the case of conventional light bulbs) and it's solar-powered so free to run. Groen's business model also enables him to give away a sizeable amount for free.

But rewind. One of the Dutchman's specialisms as a consultant was communications, so he knows the power of a good story. WakaWaka didn't spring from a venture philanthropist's deep pockets nor from the technological know-how of a large corporation. It all began with the South Africa World Cup in 2010, which was supposed to be carbon neutral but which actually ended with a deficit of 2.8m tonnes of carbon emissions.

What to do? Well, the South African government announced an international competition to design cutting-edge emission reduction ideas. Just one small condition: it wasn't to cost the taxpayer anything. Together with Lemnis, a Dutch light manufacturer, Groen and his business partner Camille van Gestel designed an ultra-efficient LED lamp.

The problem was the cost, which was "far too expensive" for the average South African. Not one to be disheartened, Groen turned to a carbon trader and negotiated a deal to sell the carbon rights to the 2.8m tonnes of emissions that his lamp would offset. "With their signature, I could go to the bank and make a loan which we could then use to lower the price for the consumer", he explains. The solution worked and he won the prize.

### Living off the grid

Until the competition, Groen has never been to South Africa. When he finally did, one thing struck him very powerfully: namely, the number South Africans (around 25%) who live off the electricity grid and for which his wonderful invention was therefore useless. Even for those on the grid, power blackouts regularly throw them into darkness. And that's just in South Africa. His research revealed that 1.5 billion people worldwide still have no regular access to power. Come the evening, the dark descends. "It's no wonder that education levels in Africa and Asia are very poor outside the big cities", Groen states, noting the difficulty of doing homework without adequate illumination.

Without power, people generally turn to one of two main alternatives for artificial light. Neither is optimal. Option one is torches run on inefficient, non-renewable, toxic batteries. Worse is option two: paraffin lamps. Poor households can spend up to 10%-20% of their income on fuelling such devices, which give off "about as much light as a candle". They are highly dangerous to boot. Groen talks of a silent massacre in the developing world as a result of fires caused by kerosene lamps. He

cites United Nations estimates that put the total number of fatalities at 300,000 per year, most of whom are children.

So the problem is clear enough. In Groen's mind, so too was the solution. A sturdy, highly efficient, sustainable, self-powered LED lamp that was affordable for those living on \$2 per day or less should do the trick. All very easy for a former consultant to say. Making it happen is another matter altogether. Welcome to the preserve of the entrepreneur.

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## UK government to oppose 2025 European vehicle emissions target

By **Fiona Harvey**, environment correspondent, for *guardian.co.uk*



Activists from Greenpeace on Monday morning unveiled a large banner in Norman Baker's constituency in Lewes, in east Sussex, calling on him to accept the proposals. Photograph: Greenpeace

The UK government is to oppose a proposal for a tough new EU-wide target on carbon emissions from vehicles, provoking protests from environmental campaigners.

The proposal for a 2025 target, by which emissions per car should not exceed 70g of carbon dioxide per kilometre, was

made by Fiona Hall, a Liberal Democrat MEP.

At present, the European commission is working with member states and MEPs to put in place targets on emissions from cars that would apply for the period from now to 2020. The targets would be that emissions from new vehicles sold in 2015 should be no higher than 130g CO<sub>2</sub>/km, and cars rolling off production lines in 2020 should have emissions not exceeding 95g CO<sub>2</sub>/km.

Hall, who sits on the industry research and energy committee in the EU parliament, wants a 2025 target to be included as well, in order to give car companies more time to prepare for the changes beyond 2020.

But the Department for Transport (DfT), where Lib Dem Norman Baker is a minister, argues that trying to extend the targets beyond 2020 at this stage will only cause delays to the process of agreeing the 2015 and 2020 targets, which a spokeswoman said needed to be agreed as soon as possible to ensure that car manufacturers can put them in place in time.

After they have been accepted, then work could begin on considering proposals for 2025 and beyond, according to the department.

A DfT spokeswoman said: "It is important to strike the right balance by supporting ambitious targets, while ensuring we do not hinder industry growth or competitiveness and encourage continued investments in low carbon vehicle technologies in the EU. Beyond 2020, it is likely that some form of mandatory targets will continue to be an effective measure for reducing CO<sub>2</sub>. We would only consider specific targets following a commission review and assessment of the impacts to ensure that target levels were ambitious, but realistic and based on sound evidence."

Hall said: "Norman Baker and I are both committed to further reducing CO<sub>2</sub> emissions from cars. But whereas the DfT wants to wait to look at specific targets until after the Commission's review next year, I would like to send a political signal right now that the 2025 target must be ambitious."

But Sara Ayech, campaigner at Greenpeace, said a 2025 proposal could be included without delaying the current considerations, if it were put in place as an indicative target range that could be firmed up in future years after the requisite impact assessments. She said if such a target was not included in this round, it would make it much harder in future to set a 2025 limit in time. Greenpeace said that the proposed 2025 target could save motorists up to £400 a year in fuel costs.

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## BM buys from its own supply of recycled electronics

By Harry Stevens

As major electronics companies continue to be accused of planning obsolescence into products, an IBM program focused on making good use of that old e-waste has been thriving.

IBM's Global Asset Recovery Services (GARS) can remanufacture just about any kind of IT equipment, regardless whether IBM made it. Since 1999, GARS has remanufactured and demanufactured nearly 68 million pounds of technology equipment.

Last year, the company's remanufacturing operations processed a quarter-million units of equipment. If you were to stack all the laptops IBM processed in 2012, they would reach 4.2 miles into the sky.



Of all the equipment and material that GARS has processed in its demanufacturing centers, over 99 percent was recycled or reused, making IBM a standout in a technology industry where companies have been charged with deliberately undermining the

longevity of their products to force users to buy newer models sooner.

### Designing against longevity

On the circuit board of a Samsung television set, for example, the condensers, sensitive to high temperatures, are soldered right next to a heat sink. "Why did Samsung put them here, even though there is room at the other end of the board?" asked Swiss repairman Felice Suglia in a recent interview with Worldcrunch.

Apple, meanwhile, is currently mired in a legal battle in Brazil over whether it intentionally withheld existing technology from its third-generation iPad so that it could release a newer model seven months later that consumers would feel pressured to buy.

"Consumers thought [they were] buying high-end equipment not knowing [it] was already an obsolete version," Brazilian Institute of Politics and Law Software attorney Sergio Palomares is quoted as saying.

Technology companies long have been charged with building obsolescence into their products, a practice that is not only ethically dubious but environmentally harmful.

"From a sustainability perspective, planned obsolescence is deplorable because new resources are needed to make newer models, and more often than not, the old product materials aren't reused or recycled," wrote the Sustainable Business Forum's Kim Crane in a recent article. "These wasted materials end up polluting ecosystems and clogging up landfills."

While planned obsolescence may be common practice at the world's biggest technology corporations, IBM's GARS program is aimed at both reusing old products and designing products that last longer and be better used at their end-of-life.

"We're continually looking and working with engineers on how to best design products that will enable us to keep upgrading and upgrading and upgrading," says John Muir, who leads the GARS sales team. "We're able to keep the technology as new as we possibly can, keep it as fresh as we possibly can, and to minimize the amount of waste."

### Putting remade electronics to work

Muir, a good-natured Scotsman who has been with IBM for almost 16 years, speaks with an enthusiasm for all things Big Blue that belies his soft-spoken manner. When we spoke, Muir had just flown in from South Africa, where he gave a talk to the entire GARS sales team. "The first thing I talked about ... was sustainability," he said.

Image credit: CC license by Samuel Mann/Flickr

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## How UPS makes the business case for sustainability projects

By Jonathan Bardelline

When UPS adds new alternative fuel or advanced technology vehicles to its fleet, it doesn't simply choose just any alternative-fuel vehicle. The company only adopts new vehicles when they're proven to be economically viable, have a reliable fueling infrastructure, are readily available, provide fuel savings and are safe.



The key to choosing new vehicles and potentially using them on a wider scale is data.

"Everything begins with management and data," said Patrick Browne, UPS's corporate sustainability program manager, "UPS is no stranger to big data. We use data to drive many aspects of our business."

Data is also a major factor in justifying sustainability decisions based on their return on investment.

"At the end of the day, you're going to have to drive a link between your sustainability initiatives and financial performance and financial outcomes," said Adam Cooper, senior manager of global strategy and sustainability practices for Accenture, speaking along with Browne at a recent GreenBiz webcast, "Making the Sustainability Business Case: A Step by Step Framework to Increase the ROI of your Sustainability Initiatives."

The value from sustainability projects isn't typically a matter of, say, just the electricity savings of using occupancy sensors. Sustainability initiatives of all types can drive value from revenue growth (through new business models or services), cost reductions, brand enhancement and risk management, said Cooper.

"Defining the ROI in some areas is easier than others," he said.

Five steps to take with any project, Cooper said, are:

1. **Gain senior level sponsorship.**
2. **Be relevant and aligned.** Depending on the project, define who the benefactor is. "Are you taking on a sustainability initiative related to your sales and marketing group? In that case you might be able to talk more about brand and goodwill value with stakeholders."
3. **Establish tangible metrics.** Related to the point above, vet these metrics throughout your organization so that you understand what the different groups want analyzed and what is relevant to them.
4. **Communicate effectively.** How you talk about the project and the potential outcomes needs to resonate with the people who are involved with the project.
5. **Incentivize and reinforce.** Senior management needs to lead by example while also looking at follow-up activities.

When you're working within those steps and looking at ROI, Enablon project manager Tom Hazeldine said that you want to see an ROI projection that is strengthened by quantified estimates of risks that have been mitigated.

UPS EV photo courtesy of UPS.

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## US honeybees threatened as 31% of colonies died out in 2012, report shows

By **Suzanne Goldenberg**, US environment correspondent, for *guardian.co.uk*

Nearly a third of managed honeybee colonies in America died out or disappeared over the winter, an annual survey found on Wednesday. The decline – which was far worse than the winter before – threatens the survival of some bee colonies.

The heavy losses of pollinators also threatens the country's food supply, researchers said. The US Department of Agriculture has estimated that honeybees contribute some \$20bn to the economy every year.

Bee keepers lost 31% of their colonies in late 2012 and through the early months of



A strange phenomenon known as colony collapse disorder has been plaguing honeybee populations for seven years. Photograph: Miguel Vidal/Reuters

this year – about double what they might expect through natural causes, survey found. The survey offered the latest evidence of a mysterious disorder that has been destroying bee colonies for seven years. The strange phenomenon

known as colony collapse disorder came to light in 2006, when the first reports came in of bees abandoning their hives and disappearing.

In a report last week, the federal government blamed a combination of factors for the rapid decline of honeybees, including a parasitic mite, viruses, bacteria, poor nutrition and genetics, as well as the effects of pesticides. But scientists and campaign groups have singled out the use of a widely used class of pesticides, which scramble the honeybees' sense of navigation.

The European Union has imposed a two-year ban on such pesticides, known as neonicotinoids, to study their effects on bee populations. However, the US authorities say there is no clear evidence pointing to pesticides as the main culprit for honeybees' decline.

The annual honeybee survey, which is a joint effort by beekeepers, academic researchers and scientists at the US Department of Agriculture, noted that bee keepers reported devastating losses over the winter months. More than two-thirds of bee keepers reported bigger losses than would allow them to remain in operation. The bee keepers who were affected by the disorder typically lost about 45% of their colonies, the survey found.

The honeybee shortage is already threatening agricultural production. Earlier this year, farmers in California reported that they nearly missed pollinating their almond crop, because of an absence of bees.

Nearly 6,300 commercial bee keepers, managing close to a quarter of colonies in the country, participated in the survey.

[Source](#)

## Adidas Group scores big with sustainability venture capital fund

By **Elizabeth Turnbull Henry**

If you are familiar with facility management, you may know that facilities have finite annual budgets, and demand for capital predictably exceeds supply. Some projects such as lighting controls may deliver carbon and financial savings, but quantifying these savings requires time and specialized training, two equally scarce resources.

Other projects, such as replacing carpets, don't deliver a return, but may still feel quite urgent to a facility manager. Without a trusted advisor to calculate and validate

their economic and environmental benefits, energy-conserving lighting controls are stuck competing for the same funds as carpets.

We experienced similar issues at the Adidas Group and set up a dedicated team to look into it. After months of calculations and visits to our facilities, we established the company's greenENERGY Fund, our creative response to this universal corporate problem.

Launched in 2012, the pilot greenENERGY Fund is an investment fund with three goals: accelerate carbon reduction in our global properties, rigorously track project performance and deliver a healthy return on capital. After six months and seven projects funded, the pilot project is showing impressive results. It is forecast to deliver 36 percent return on investment and cut carbon by 1,401 metric tons of CO<sub>2</sub> - that's like taking 256 cars off the road each year.

This pilot is scaling up -- way up -- with \$2 million committed to energy efficiency projects across the globe.

Projects with attractive financial and carbon returns deserve preferential treatment. As manager of the Adidas Group greenENERGY Fund, I look at carbon reduction projects as a venture capitalist might: a portfolio of value-creating investments. I

rigorously scout, evaluate and invest in efficiency projects because they deliver great financial savings and reduce our greenhouse gas emissions. Green investments are therefore seen as a business opportunity, delivering revenue for the business.

This is why the Adidas Group has worked with Environmental Defense Fund's Climate Corps program since 2010 to identify energy and money-saving opportunities across its portfolio. EDF, which examines efficiency opportunities for hundreds of companies across the map, is so enthused by the Adidas Group greenENERGY Fund that the organization is touting it to its audiences far and wide. Moreover, EDF asked us to present this new project at the recent Fortune Brainstorm Green Conference in California.

### Fund takes a portfolio approach

Adidas image by TonyV3112 via Shutterstock.com.

The greenENERGY Fund is generating buzz because it is working beautifully, accelerating verified carbon reductions at a nice profit. It is also the first fund in the footwear and apparel industry with our unique "portfolio finance" approach. These two key powers make it a keen carbon reduction tool:

1. The fund has a strict 20 percent annual return on capital target across the portfolio, but flexibility on the project level. This means that high financial return projects can subsidize projects with great carbon reductions but lower financial return. With a portfolio approach, I can deploy more capital -- and reduce more carbon -- than if I evaluated projects individually.
2. If a project falls below the 20 percent return threshold, it competes with other projects on the basis of metric tons CO<sub>2</sub>-e reduced per dollar invested. The higher the MT CO<sub>2</sub>-e/\$, the higher priority it becomes to finance. In this way, the fund is engineered to maximize net present value and carbon reduction.

The greenENERGY Fund is becoming our central hub for energy best practices and engineering know-how. With each retrofit, we learn more about the risks and benefits of certain project types. Each investment case, including all economics, challenges and results, are summarized and shared on a central portal. Facilities can review what has been done and get ideas for their own improvements. It's a positive feedback loop that becomes more powerful every day.

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# The true cost of water

By Libby Bernick

The environmental and social costs of global business water use add up to around \$1.9 trillion per year, according to new research by Trucost for the TEEB for Business Coalition, *Natural Capital at Risk: The Top 100 Externalities of Business*.

Some of these external water costs already are being internalized and hitting bottom lines: Just last year, the worst drought in the United States in 50 years sent commodity prices skyrocketing. Companies, especially those in the food,



beverage and apparel sectors whose margins and supply chains are tightly linked to agricultural commodities, can use the true cost of water to get ahead of the trend of external costs increasingly being internalized through regulations, pricing or shortages.

## Gaps in pricing and supply create opportunities

Most raw materials that businesses depend on require water. However, a gap already exists between water supply and demand, and by 2030 water demand will exceed supply by 40 percent.

Part of the problem is that water is not correctly valued, and this is creating perverse market incentives. For example, around half of China's industrial output and 40 percent of its water-intensive agricultural products are produced in 11 of the country's driest regions, comparable in water scarcity to those of the Middle East. Because the price of water in these regions is among the lowest in the world, the market creates an incentive for retailers and manufacturers to outsource services to this water-scarce region, despite the high risk of drought or damage to long-term water supplies.

In fact, because water assets are overexploited and undervalued in many countries, this creates an opportunity for forward-thinking businesses to use external environmental costs to inform their business strategies. For example, Yarra Valley Water recently calculated the true environmental costs of water to better understand how to allocate its own water resources. The results are highlighted in a white paper authored by Trucost, *Valuing Water to Drive More Effective Decisions*, which aims to spark discussion around integrating the true cost of water into the decision-making of companies and regulators.

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# What will it take to change packaging recycling in the U.S.?

By Jonathan Bardelline

The recycling rate in the U.S. has been stuck in a rut, slowly inching up year by year, a signal that any major increases will need to be spurred by major actions.

Those on all sides of the issue may agree that changes need to be made to recycling systems, but a recent dustup over a trade group's position paper shows they're not seeing eye-to-eye on some ideas.

Take extended producer responsibility (EPR). It's the concept that makes those who produce items also responsible for funding (and sometimes also operating) recycling systems for those same items.

For brands it means added costs, but also incentives to use easily and readily recyclable material. For governments, it shifts away some waste disposal and recycling expenses. And for recyclers, it means possible changes to the way they operate as well as potential new or expanded material streams.

The Product Stewardship Institute (PSI), a major player on the pro-EPR side, recently got a glimpse at a position paper by AMERIPEN, a packaging-focused trade group, and called out a number of statements in the paper as misleading or false. While AMERIPEN finalizes a report about recycling systems for packaging, it maintains its goal is to advance recycling improvements. That's the same aim of the PSI, although what seems to be missing from the debate is actual discussion and consensus.

More than half of the states already have a variety of EPR laws on the books covering products such as batteries, paint, thermostats, electronics and fluorescent lights. While some date back to the '90s, efforts to put EPR systems for packaging in place have developed more recently. The latest action has been taken in Rhode Island, where legislation has been introduced but is being held for further study.

The PSI has been working on packaging EPR for about five years, said CEO Scott Cassel, and was one of the first groups to try to involve the U.S. Environmental Protection Agency. The PSI has also sought to work with brand owners, state and local governments, and other stakeholders.

Since then, Cassel said, there have been a number of scattershot efforts by others. "While there have been and continue to be initiatives on this in the U.S.," he said, "they are all separate. They are all disparate efforts."

## Companies' efforts to improve recycling

The EPA opened up a dialogue among companies, governments and a few non-profits. "While there was data on the table and much learning," Cassel said, "it was not set up for agreements, it was not set up to include all the different stakeholders, and because of that it was very limited in its scope and its results."

Nestle Waters co-founded Recycling Reinvented, a non-profit that supports the EPR model and recently commissioned a study on the economics of packaging and paper EPR systems.

Alcoa led the creation of an initiative called Action to Accelerate Recycling, to look into how companies voluntarily can support packaging recovery and recycling.

And AMERIPEN was founded and has been conducting research on recycling systems. "The project objective for studying EPR systems was to produce a comprehensive paper that evaluates funding systems to support improved packaging end of life scenarios, including increased recovery," said Jeff Wooster, AMERIPEN secretary and Dow Chemical's global sustainability leader. "This evaluation will include programs that are industry owned and will explore different faces of EPR and evaluate both successful and challenged elements of various programs."

PSI, for all its efforts, has found brand owners reluctant to enter in discussions. "They are still learning about these issues. They are very preliminary in their understanding about what their responsibilities might be," Cassel said.

Waste management companies also have been reluctant to join the push for EPR, as it could change the way they operate. Commodities groups, meanwhile, have been more supportive of bottle bills, which put deposits on containers, giving consumers a high incentive to return them to get that deposit back.

*Packaging photo by Darryl Brooks on Shutterstock*



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## Kroger to power distribution center with spoiled food

By *SustainableBusiness.com News*

Kroger has come up with a solution that will put a dent in the food waste generated by the supermarket chain -- it will turn it into biogas energy that powers a distribution center.

Kroger is the biggest supermarket chain in the U.S. with 2,400 supermarkets in 31 states.



Any food that can't be sold or donated will help power its 650,000-square-foot Ralphs/Food 4 Less distribution center in Compton, Calif.

An anaerobic digester will process more than 55,000 tons of food waste a year, about 150 tons a day, providing 20 percent of the

facility's energy. And it will use 150 zero emission fuel cell forklifts to do the job.

Pretty amazing how much food waste is generated by supermarkets, isn't it?

If you've been reading our articles on the growing use of biodigesters, you know that besides producing energy they also generate organic fertilizer as a byproduct. Importantly, the system also will reduce truck trips by more than 500,000 miles each year. Rather than making special trips to haul food waste to landfills or waste-to-energy plants, the biodigester will be on-site. The same trucks that deliver food to supermarkets from the distribution center will make their return trip with food waste from supermarkets.

The Compton distribution center serves 359 supermarkets in Southern California. Kroger's biogas system is designed and operated by Boston-based FEED Resource Recovery, Inc., which has developed a closed-loop, zero waste solution for the food industry.

Kroger says its investment in the biogas digester will be paid back within five years, an 18.5 percent return on investment. It's considering adding biogas to other distribution sites.

Forbes recognized Kroger as the most generous company in America for its food contributions: 125 million meals a year through more than 80 Feeding America food bank partners.

The top award for energy efficiency went to Kroger last year from the Alliance to Save Energy.

In another recent announcement, Kroger is adding electric vehicle charging stations at 300 supermarkets and is joining other corporate leaders in committing to buy only sustainably sourced palm oil and seafood.

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*Image credit: CC license by außerirdische sind gesund/Flickr*

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## Nike joins NASA, USAID to develop sustainable fabrics

By *SustainableBusiness.com News*

Nike, NASA, U.S. Agency for International Development and the U.S. State Department have launched a challenge to create new, sustainable materials.

It's an effort to bring collective genius, unprecedented networks and new resources to overcome some of humanity's toughest sustainability challenges, they say.

"LAUNCH System Challenge 2013 seeks innovations that will transform the system of fabrics to one that advances equitable global economic growth, drives human prosperity and replenishes the planet's resources," the group says.

They are looking for innovations that potentially can scale in two years, as well as game-changing early stage technologies and prototypes. Innovations can be business models, financial instruments, technologies and programs that accelerate research, education and capacity building.

Specifically, they are looking for:

- Fabric materials that have positive social and environmental impact, such as multi-purpose synthetic and bio-synthetic materials; smart and/or self-healing materials; fabrics that efficiently and effectively enable recycling; and applications that eliminate toxins in fabrics.

- Processes for manufacturing fabrics that use low or positive environmental impact approaches, with a bias toward inclusive business models that positively develop human capital, respect rights and deliver shared value:

- Solutions that increase energy, water and raw material efficiency in the manufacturing process.
- Manufacturing processes and technologies that enable maximum conversion of materials and minimum consumption of natural resources
- Solutions that put workers at the heart of the innovation process.
- Zero waste or closed-loop systems that eliminate waste and create equitable, empowered workforces.
- Scalable innovative business models that are sustainable and equitable.
- Manufacturing processes that reuse waste.

*Nike logo image by ~ezs via Compfight cc.*



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## Solar Panels Cover Taiwan Stadium, A Beautiful Design

By *SustainableBusiness.com News*

One industry that's been making great strides on sustainability in recent years is the sports industry.

We've been treated to an increasing number of stadiums that are net-zero energy, producing more energy from solar and wind than the stadium needs.

Here's the incredible Kaohsiung World Stadium in Taiwan, which opened in 2009. The largest stadium in the country with 55,000 seats, it is shaped like a dragon covered entirely by solar panels.

Almost 9000 solar PV panels are integrated into the building's skin (BIPV). They generate 75% of the stadium's electricity when games are on, and sells it to the grid during down times. The system produces 1.14 gigawatt hours of electricity a year.

Yes, the blue is all solar panels:

Designers kept the sides and roof open based on the direction of the wind during summers to take advantage of natural cooling. By creating a tunnel, air passes through to keep fans cool.

Rainwater collected on the roof is used to irrigate the public park that surrounds the stadium.



[<Source>](#)

## Patagonia's new VC fund to invest in trailblazing green firms

By *SustainableBusiness.com News*

Patagonia, one of the most enduring stand-out leaders on corporate sustainability, is launching a venture capital fund to invest in future leaders.

Starting with \$20 million, Patagonia will invest in companies that share its environmental values with a focus on five areas: clothing, food, water, energy, and waste.

Dubbed "\$20 Million & Change," the fund will make investments in the \$500,000 to \$5 million range in early stage companies that have at least \$1 million in revenue or capitalization. It will



take minority and majority stakes and could also create joint ventures.

Besides raising funds, portfolio companies will get lots of help from Patagonia in sourcing materials, manufacturing, and selling products. They'll help companies get distribution channels going, even using Patagonia's label and selling products through their stores and online venues.

"We've had a great five years - we basically doubled the company, and have cash on the balance sheets. Unlike a lot of other companies that sort of hoard their cash, Yvon and I started talking about what we could do that might serve the causes we care about," Rose Marcario, former COO of Patagonia who will head the fund, told Bloomberg Businessweek.

Pretty amazing that Patagonia has grown so much during the recession. The founders believe that has a lot to do with customers relating to the company's values in addition to improved operations and global expansion.

Since 1996, Patagonia has used only organically grown cotton in its clothing line. Committed to making its products landfill-free and reducing needless consumption - even of its own products - it launched the Common Threads Initiative on eBay, where people can buy and sell used Patagonia clothes.

This is one of its ads:

Yvon Chouinard founded Patagonia 40 years ago and was among the first to register it as a "California Benefit Corporation," when that became available for the first time last year. It is a new class of corporation for businesses whose mission is to operate in an environmentally and socially responsible manner.

In recent years, Patagonia has diversified beyond selling outdoor clothes. Patagonia Provisions sells organic and sustainably sourced food and Patagonia Media publishes books and media projects with an environmental focus.

The company has also pledged to avoid buying oil that comes from Canada's tar sands.

In 2002, Yvon Chouinard founded 1% for the Planet, a global network of businesses that donate 1% of sales to the environment. It has 1,400 member companies in 44 countries.

"I come from a very traditional background of private equity and public companies, and I really have seen for 25 years what that paradigm does, and I don't think it's that healthy," Marcario told Bloomberg. "We need a revolution in business, and we need business leaders to drive that revolution; otherwise we won't have a world worth living in. I think [the change] is not going to come from scientists or politicians or social activists."

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*Backcountry skier photo by Roberto Caucino on Shutterstock.*

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## Arctic faces further threat from ocean acidification

*Acidification is an additional stress on an ecosystem already under pressure from rapid sea ice loss, study warns*

By [guardian.co.uk](http://guardian.co.uk),

Arctic marine waters are experiencing widespread and rapid ocean acidification, report says. Photograph: Kathryn Hansen/Nasa

The Arctic ecosystem, already under pressure from record ice melts, faces another potential threat in the form of rapid acidification of the ocean, according to an international study published on Monday.

Acidification, blamed on the transformation of rising levels of the greenhouse gas carbon dioxide from the air into carbonic acid in the sea, makes it harder for shellfish and crabs to grow their shells, and might also impair fish reproduction, it said.



Arctic marine waters are experiencing widespread and rapid ocean acidification, report says. Photograph: Kathryn Hansen/Nasa

Cold water absorbs carbon dioxide more readily than warm water, making the Arctic especially vulnerable. The report said the average acidity of surface ocean waters worldwide was now about 30% higher than at the start of the industrial revolution.

"Arctic marine waters are experiencing widespread and rapid ocean acidification," said the report by 60 experts for the Arctic Monitoring and Assessment Programme, commissioned by the eight nations with Arctic territories.

"Ocean acidification is likely to affect the abundance, productivity and distribution of marine species, but the magnitude and direction of change are uncertain."

[<Arctic Ocean Acidification \(2013\) - Short \(3 minute\) version>](#)

At almost 400 parts per million (ppm), there is now 40% more carbon dioxide in the atmosphere than before the industrial era began. Almost all experts say the rise is linked to the burning of fossil fuels.

With global surface temperatures rising, the Arctic sea ice shrank in 2012 to the smallest area since satellite records began, disrupting the hunting livelihoods of indigenous peoples and opening the region to more shipping and oil and gas exploration. As yet, the consequences of acidification are harder to predict.

Experiments with the eggs of brittlestars, which are related to starfish, showed that they died within days when exposed to the levels of acidification likely in coming decades, said Sam Dupont, one of the report's authors from the University of Gothenburg in Sweden.

That would have knock-on effects on creatures that prey on them, such as crabs and fish.

The report said adult and juvenile fish were likely to cope with levels of acidification likely in the coming century but fish eggs and young larvae might be more sensitive.

In general, the report said, fish stocks might be more "robust to ocean acidification" if the other stresses they are already subject to, such as overfishing or habitat degradation, were minimised.

A warming of Arctic waters means that plankton are growing further north, providing a new source of food for fish such as cod and salmon, but Dupont said acidification would "constrain the positive effects of warming" for some species.

Meanwhile some types of seagrass seem likely to thrive with acidification.

Overall, Dupont said, acidification was "an additional stressor on a system that is already quite fragile".

The report will be presented to Arctic governments at a meeting in Sweden next week attended by US secretary of state, John Kerry and Russian foreign minister, Sergei Lavrov, among others.

[<Source>](#)



## How the National Football League became a champion of sustainability

NFL teams are competing off the pitch to assert their sustainability credentials and take the green message to fans

By **Felicity Carus**, *Guardian Professional*,



Candlestick Park during a power outage. The San Francisco 49ers are due to move to a new, more sustainable stadium in 2014. Photograph: Jeff Chiu/AP

America's National Football League might be an unusual place to find some of the biggest advocates of green business and sustainability in the United States. But some NFL teams have now started to engage in a competition off the field to become as green as the turf they play on.

San Francisco's 49ers, named after the year of the California gold rush, have been playing at Candlestick Park in the south of the city since 1961. After 50 years of subjecting tens of thousands of 49ers fans to the notoriously icy winds that whip around the stadium, the team is heading to the sunnier climate of Santa Clara in the heart of Silicon Valley.

### Building sustainability into the stadium

Up to 1,000 workers are working around the clock to prepare the stadium for its opening game in 2014. Thousands of tonnes of steel and concrete have not been selected for their environmental friendliness, but when the stadium is operating, the seismically engineered building could become the first LEED Gold standard stadium in the NFL.

Jim Mercurio, vice president of stadium operations and security, said that the 33-year-old CEO and president Jed York is pushing the sustainability agenda. "York is championing these efforts because it's the right thing to do. We can slowly change the way people think and behave by employing responsible techniques, responsible building standards and operating standards to where they're making a difference. That's good for the community and it's good for the environment. For millions of people, the NFL is the quintessential sport, so some people would argue you have a responsibility. Athletes are automatically looked upon as role models."

A geothermal heat pump will transfer heat from the sun-drenched ground around the stadium to the hot water supply and an 1,800-gallon-per-minute water recycling system will irrigate the sports field and landscaping. Bamboo and FSC-certified wood and reclaimed materials are being used, including wood rumoured to be from a dismantled unit at NASA's Moffett Field centre, within eyeshot of the 68,500-seat stadium.

Public transport connections will be improved at the new site, too. The stadium management expects 25% of fans will take light rail or train services; a marked improvement on the 10% who take public transport to Candlestick Park.

While overall energy demand is as yet undisclosed, a solar system will be installed by NRG Energy next to a green roof with native plants. Annually, the system is anticipated to produce 468,000 kilowatts per hour, which should offset the energy demand of 10 NFL games and increase the building's overall efficiency by 10%.

### Connecting concerns about planet and profit

NFL's drive for self-sufficiency took on a greater significance after a power outage halted the last Superbowl in February while 108 million TV viewers looked on. Mercurio stops short of saying that sustainability measures at the \$1.2bn stadium will be good for business by saving money through energy efficiency. But at other stadiums, concerns about the planet and profits have clearly been connected. York cites his most respected competitor as Jonathan Kraft, the president of the New England Patriots.

The Patriots' Gillette Stadium opened in 2002. Since then, stadium operators calculate annual savings of well over \$1m through a 30% reduction in energy consumption from lighting and heating automation, recycling, solar arrays and LED lighting. The stadium also has a closed loop water system that reclaims upwards of 16m gallons of water a year in its own wastewater treatment plant.

Jim Nolan, Patriots and Gillette Stadium senior vice-president of administration, operations and finance, said: "If you include the wastewater re-use system that was included in the original design and construction of the stadium, our annual savings through sustainability initiatives exceed \$2m annually."

In 2010, the Patriots installed at 500kW solar array and last year added a further 1.4MW that provides around 40% of the energy needs for Patriot Place, a mall next to the stadium. "We have found our sustainability measures to be very good for business," said Nolan. "There is investment to get initiatives off the ground once they're operational, they're cash positive. Specifically, I look at the solar arrays as being smart business deals and initiatives to reduce waste and utility consumption that are also cash positive."

[<ReadMore>](#)

## Cow Poop to Cow Power: Powering Vermont

By *SustainableBusiness.com News*



Residents of Vermont are being treated to a new form of local renewable energy - Cow Power.

Cow Poop to Cow Power - a new way to power Vermont, that's utility Green Mountain Power's motto.

All residents can now buy energy produced from the manure of Vermont's 10,000 dairy cows

straight from the utility. The state just ruled the program could be expanded state-wide, so they'll be a lot more cows signing on to participate. 12 farms are currently in the program. Not only does Cow Power feed electricity to the grid, it also provides hot water and space heating for the farms that produce it using on-site anaerobic digesters. Coarse plant fibers left over can be used as bedding and what's left over after that can be processed and sold as garden soil. The liquid portion is an enhanced fertilizer used to grow crops to feed the cows.

Matt Maxwell, who has been producing Cow Power since 2008, says: "We joined the program because milk prices were so low, and we were looking for a separate, steady income stream. It's been great for us. There's the income from the sale of electricity. We're using the dry by-product as bedding for our 750 dairy cows, and we have excess to sell to other farmers and landscapers.

With excess heat from the engine we've been able to heat a 2,600 square foot greenhouse where we raise broccoli and greens for the wholesale market all winter, and tomatoes and peppers in the summer. We also heat our machine shop with the excess heat, which means we buy way less heating oil. When people pay a little extra to buy GMP Cow Power, they are helping the environment, and they are helping Vermont farmers stay in business."

[<ReadMore>](#)

## First Building in the World Covered in Algae

By SustainableBusiness.com News

We've written about the future of buildings - that they are moving toward those that can adapt and breathe - and now we're seeing the beginnings of that.

An apartment building in Hamburg, Germany is giving us a peek into the future - it is covered with algae.



Not that algae is hanging on the façade, it's inside glass panels that also function as solar hot water collectors.

The 5-story Bio Intelligent Quotient (B.I.Q.) building, constructed to Passive House standards, gets all its energy from renewables.

The addition of algae on the outside walls will be used to create biofuels to heat the building and also to provide shade and muffle street noise. The technology is "an outstanding and important development in the use of renewable resources in building technology," **comparable to advances in the space program**, Lukas Verlage, managing director of the Colt Group, part of the consortium that designed it, told the *NY Times*.

"Using algae as an in-house energy source might sound futuristic now, but probably will be established in 10 years," Rainer Müller told the *NY Times*. He's press officer for the International Building Exhibition, which introduced a competition in 2009 that led to the creation of the B.I.Q. house.

Entrants to the competition were asked to develop "systems and products that behave dynamically, unlike conventional building materials, which are static."

Micro-algae - tiny plants about the size of bacteria - are inside 129 bioreactors. They are continuously fed liquid nutrients and carbon dioxide and scrubbers inside the panels keep the glass clean. They double as solar hot water collectors, costing \$6.58 million to build the façade.

Sunlight that's not absorbed by the algae is converted into heat. It can be used for hot water or stored in the geothermal system underground.

Periodically, the algae will be collected from the tanks and transported to a nearby biogas plant where it will produce electricity from the resulting methane gas.

Next year US-based Grow Energy plans to accept preorders for its Verde system, and hopes to get it to homeowners by 2015.

The system, which cultivates algae, can be mounted on the roof or wall of a home. It automatically dries and burns the algae to generate about 35% of a home's electricity for about \$12,000.

[<Source>](#)

## San Francisco Achieves 80% Recycling, Highest in US

By SustainableBusiness.com News

Recycling isn't big news anymore now that most cities do it, but recycling rates have leveled off for years, with most "successful" programs reaching the 30% range instead of continuing to grow.

San Francisco has reached an unheard of 80% landfill diversion rate, way higher than any other city in North America. It has therefore upped its goal of 75% diversion by 2020 to zero waste.

It does so through source reduction, reuse, and mandatory recycling and composting programs, that are backed by innovative policies, financial incentives, outreach and education.

**What's makes the program so successful?**



First, they accept many more materials for recycling than most cities do (and have invested in the infrastructure to sort it), and second they require both households and businesses to recycle and compost.

San Francisco was the first city to require composting (where people put out compostable materials

for pick-up), which has also contributed to meeting its successful target of cutting greenhouse gas emissions 12% below 1990 levels.

Here are the bins they use: blue for recycling (paper, plastics, glass and metals), green for food scraps and other organic matter, and black for garbage that can't currently be recycled.

Last year, Governor Brown signed a law that extends the requirement for recycling and composting: commercial businesses must participate if they generate four or more cubic yards of garbage a week as well as multifamily dwellings with five or more units.

As in most states, although businesses create about two-thirds of the waste stream, few recycle, according to Californians Against Waste.

Also last year, San Francisco expanded its first-in-the-nation ban on non-compostable plastic bags to include almost all retailers in the city.

### State of US Recycling

Recycling is a largely an unrecognized but major contributor to energy efficiency - it takes much less energy to produce new products from recycled ones, rather than mining virgin material from the ground.

Composting is critical for soil health and keeping those materials out of landfills solves the problem of methane leaching caused when they decompose in an oxygen deprived situation.

If all US cities recycled and composted like San Francisco that would create 2.3 million jobs.

Even though San Francisco has cut waste-to-landfills by half over the past 10 years, it still sends 444,000 tons to the landfill each year - enough to fill the TransAmerica building nine times. Half of that material could be recycled or composted - imagine the waste other cities produce.

That remaining waste is mostly coming from neighborhoods where English isn't the first language, not from non-compliance, so staff are reaching out to help them understand the program.

In the report, "Closing the Loop," GreenBlue recommends expanding US recycling through:

- Clear, nationally-coordinated waste policies, including extended producer responsibility legislation
- Ongoing public education campaigns encouraging participation in recycling and composting
- "Hub and spoke" regional recycling in rural areas

As of 2010, the US recycled 34% of garbage, which amounts to 85 million tons out of a total 250 million tons, a big rise from 10% in 1980, before the advent of recycling programs. Less than 3% of food scraps are composted nationwide. The amount of garbage Americans produce is slightly inching down, from a high of 4.57 pounds per person a day in 1990 to 4.43 pounds today.

[<Source>](#)



## What's Happening in India?

By SustainableBusiness.com News



After most Indian states failed to meet renewable energy targets last year, investments seem to be trending up again.

So far this year, five clean energy deals have signed contracts for about \$500 million in investments, reports *Economic Times*.

The largest is a \$150 million investment in local wind developer Greenko Group by an affiliate of Singapore's Investment Corporation. General Electric has also invested in Greenko, which plans to build 1 gigawatt (GW) of wind in India.

Wind comprises most of India's renewable energy, with 18.3 GW out of the 26 GW total installed. Another 15 GW of wind is expected to be added over the next five years.

Solar is also picking up speed in both off-grid and grid-connected applications. Off the grid, there's 125 MW of solar PV, 16.9 megawatts of that added in March. Grid-connected PV came close to "Germany" levels in March, adding 240 MW, according to India's Ministry of New and Renewable Energy.

In all, solar PV nearly doubled over the past year adding 754 MW, for a total of 1.69 GW. There's also 6.98 million square meters of solar hot water collectors.

Here's India's biggest solar project, Gujarat Solar Park, at 214 MW, with plans to expand to 600 MW, built by SunEdison:

For the first time, India's government will provide grants for 30% of solar plant construction costs to projects that win bids in its auctions. This month, developers will bid to build 750 MW of solar.

India is one of a handful of countries that's been using auctions to drive down the cost of solar energy without subsidies - the lowest bidder gets the right to supply solar electricity.

Chronic blackouts reduce economic growth by 1.2% a year, says the Ministry, one of the reasons the government is stepping up the pace.

India plans to install 1.7 GW of solar by early 2014, and 20 GW by 2022 under its National Solar Mission - 10% of electricity. For renewable energy, the target is 80 GW by 2020.

Unfortunately, India and Bangladesh signed a \$1.6 billion joint venture agreement to build a 1.3 GW coal-fired power plant which will come on line within five years. They say it will be the cheapest form of energy after hydropower and will accelerate the countries' growth.

On the green building side, India's Bureau of Energy Efficiency has developed a voluntary Energy Conservation Building Code. It starts by rating office buildings and will likely be extended to homes.

Buildings are rated based on actual energy use - how many kilowatts are consumed per square meter each year. It includes criteria such hours of operation, climatic zone and conditioned space

[<ReadMore>](#)

## India acts to save Asiatic lion by moving it -but hard work has only just begun

By Kavitha Rao, for *guardian.co.uk*

Wildlife is under threat in most of India, but there's one state that's clinging to its fauna, if rather too tightly. The state of Gujarat - whose Gir forest shelters the world's only Asiatic lion population - has lost a bitter battle over an ambitious translocation project.

For over 18 years, conservationists have been attempting to move a pride of Gir lions to the Kuno sanctuary in the state of Madhya Pradesh. But the Gujarat government stubbornly refused to let the lions go. Meanwhile, an



Male and female Asiatic lions drink water in Gir Forest National Park, the threatened species' current habitat. Photograph: Nisarg Lakhmani/Corbis

impatient Madhya Pradesh government bizarrely suggested introducing African cheetahs, whose Asiatic cousin once roamed the area.

Finally, on 15 April, after eight years of litigation, the Supreme Court of India cleared the translocation of the lions, though it said an emphatic no to the cheetahs. Now the reluctant Gujarat government is considering filing a review petition, even as angry locals protest the translocation, some even threatening to kill themselves.

The Gujarat government, and Chief Minister Narendra Modi, have been arguing for years that the Gir lions are the "pride of the state". In court, the lions were described as "family members who could not be parted with." The native Maldhari tribals have lived alongside the lions for years, on the whole peacefully. Even the Supreme Court acknowledged the state's role in saving the lion from an extinction that seemed almost certain only a few decades ago. The latest census put the lion population at 411, up from 359 in 2005.

But most wildlife experts agree that while the state has done well, the lions have outgrown the Gir forest, and a single epidemic or calamity could wipe out the entire population. In 1994, an epidemic of canine distemper killed an estimated 1000 lions in the Serengeti National Park in Tanzania.

"The Gir conservation project has staved off extinction and helped increase population. The translocation is about strengthening conservation prospects and managing success. At the moment, all our eggs are in one basket and that is a huge risk," says Dr Ravi Chellam, well known conservationist and former director of the Wildlife Conservation Society of India. Chellam was one of the experts who recommended the translocation, which he likens to buying life insurance.

In its judgement, not surprisingly, the Supreme Court rejected the Gujarat government's emotional appeal. "The cardinal issue is not whether the Asian lion is a family member, but the preservation of an endangered species," ruled the court, while directing that the lions be moved within six months.

Meanwhile, now that the cheetahs have been nixed, the Gujarat government reportedly plans to argue that Kuno is already home to stray tigers from the

nearby tiger sanctuary of Ranthambhore. Will two big cats in the same area cause trouble? Most experts say the tiger population in Kuno is too small to make a difference. "Tigers and lions have had overlapping distribution historically. It's still not a good enough reason to deny translocation," says Chellam.

An earlier translocation of lions to the state of Uttar Pradesh in the fifties failed. With insufficient prey and only a small area to roam, the lions hunted nearby village cattle, and were hunted in their turn by angry villagers. This time around, conservationists say things will be different. "Kuno was chosen because of its size-3000 sq km-and diverse prey base. Lions need lots of space, plenty of prey, and protection from people," says Chellam. Wildlife studies have shown that the prey count in Kuno is actually higher than that of Gir. 24 villages were relocated in Kuno, at considerable expense, to make way for the lions, though many villagers complain that they have still not received compensation.

Despite the years of preparation, the hard work has only just begun. Indeed, Kuno is a test case for conservation through translocation. Kuno has a strong gun culture, and the Supreme Court has agreed that forest staff will need to be trained and deployed to prevent poaching. Locals will need to be educated, involved and given a stake in conservation, just as the Maldharis had. The project will need male lions to be moved from Gir to Kuno every three to five years for the next 30 years.

All this means that Gujarat will very soon have to stop sulking and start cooperating. After nearly 20 years of bickering and debate, it's time to put everything else aside and act to save the Asiatic lion.

[<Source>](#)

## India in top five markets for wind energy: Report

India retained its position as one of the top five wind energy markets in the world in 2012, despite poor capacity addition in several states such as Tamil Nadu, Karnataka, Andhra Pradesh and Maharashtra.



India was the third largest market for new turbines last year by adding a capacity of 2441 MW, the World Wind Energy Report 2012

stated, adding the wind turbine capacity addition in the world grew at 19 per cent to 44,609 MW, lowest in more than a decade.

"The Indian wind market has a very good potential, however, policy uncertainties and unpaid electricity bills have damaged investors' confidence," the World Wind Energy Association noted, adding it is expecting India, China, Europe as well as North America to drive the growth in coming years.

India added 2827 MW wind power capacity in 2011 even as the Indian Wind Power Association (IWPA) claimed that withdrawal of accelerated depreciation (AD) benefit has resulted in low attraction for wind energy.

[<Source>](#)

## India to roll out Rs 43,000-crore green energy corridor

India has plans to roll out Rs 43,000-crore project termed 'green energy corridor' that will facilitate the integration of renewable energy into the national grid.

The blueprint for the project has been submitted to the Ministry of Power by the Power Grid Corporation of



India, the Hindu Business Line newspaper reported. While implementation, the project would be split into intra- and inter-State levels, a senior Ministry official was quoted by the newspaper as saying.

The green energy corridor is aimed at bringing in more electricity produced from renewable sources with the conventional power stations in the grid. According to a power ministry official, Germany has committed technical and developmental assistance of €1 billion for it.

Currently, absorbing renewable electricity into the grid is difficult because of varying voltage and supply, he said. "The transmission system would be made dynamic to handle the variations leading to an integrated grid across the nation," the official added.

[<Source>](#)

## UP targets RE generation through policy incentives

The state of Uttar Pradesh (UP) has seen installation of around 824 MW of grid connected renewable energy power besides 212 MW of off-grid renewable energy power.

The state through its policy initiatives and subsidy programmes aims to make full use of renewable potential to fight energy crisis. The state government of UP has declared its policy for small hydro power and solar energy for utilization of available potential in these sectors.

Under Ministry for New and Renewable Energy's (MNRE) schemes and programmes, the states receive proposals for grant of Central Financial Assistance (CFA) on an ongoing basis through State Governments/ designated State Nodal Agencies. MNRE approved 28 proposals for grant of CFA during 2012-13 for UP.

During 2012-13, a total of around Rs. 56.89 crore were released as CFA under the various renewable energy schemes /programmes to the state. The MNRE continuously encourages private sector investment in renewable energy projects through incentives such as capital subsidy, generation based incentive (GBI) and accelerated depreciation (AD).



[<Source>](#)



## Forthcoming Events

### Giving Back - NGO India 2013

14<sup>th</sup> - 15<sup>th</sup> June 2013

Mumbai, Maharashtra

**Giving Back - NGO India** is the CSR initiative of UBM India. As part of its commitment to sustainable business, UBM globally, has developed an exciting initiative, **UBM's Community Engagement Series** that aims to provide a platform for the sharing of knowledge, skills, experiences and good governance across the voluntary sector. The will take place on the 14th and 15th June 2013 at the Bombay Convention and Exhibition Centre, Goregaon (E), Mumbai, India. This two-day event will have an exhibition and a co-located conference. Top Indian corporates and conference delegates are expected to be at the event over the span of two days to meet and interact with many NGOs. The second day of the event (15th June 2013) will be open to the general public who are interested in volunteering and supporting the exhibiting NGOs.

[<ReadMore>](#)

### Distributed Energy Storage (DES)

17th to 18th June 2013,

London, United Kingdom

The Conference titled "Distributed Energy Storage" is being organized by SMI Group. This conference shall be held on 17<sup>th</sup> and 18<sup>th</sup> June, 2013 in London, UK. The conference will provide with a complete view of the **DES market**. Focusing on **policy and market updates**, pilot project updates technological challenges and breakthroughs and **case studies** from leading **utility companies** across the **UK and Europe**. This informative event will bring together key leaders in the field to provide attendees with an in-depth look into the current status of distributed energy storage.

The event will be an excellent forum for learning about new advances in the field, presenting attendees with the latest information on DES from across the globe in a vastly increasing sector. This event promises to be a unique platform for networking and problem solving as well discussion and debate.

[<Read More>](#)

### Realizing Global Justice: Theory and Practice

19th to 22nd June 2013

Tromsø, Norway

University of Tromsø is organizing a conference "Realizing Global Justice: Theory and Practice" Tromsø, Norway on June 19<sup>th</sup> to 22<sup>nd</sup>, 2013. The conference is intended as a meeting place for friendly discussions and conjoint learning among students, young researchers and internationally renowned researchers such as Professor Philippe Van Parijs (Catholic University of Louvain), Professor Thomas Pogge (Yale University), Professor Gerard Delanty (University of Sussex), Professor Tove Pettersen (University of Oslo), and Associate Professor Eva Erman (Uppsala University). It is expected to be attended by delegates from Brazil, USA, Germany, India, Poland, Kosovo, Philippines, Spain, Switzerland, Belgium, Canada, Sweden, among other countries.

[<Conference Brochure>](#)

### IUCN Academy of Environmental Law Colloquium

26 - 28 June 2013

Hamilton, New Zealand

The conference "IUCN Academy of Environmental Law Colloquium" will be held in the Gallagher Academy of Performing Arts, an events centre situated lakeside on University of Waikato campus. Organizers expect that members of the Academy will contribute to a critique of environmental injustice and offer 'sacred footsteps' into new frontiers of environmental justice. We hope for fresh jurisprudential, doctrinal, institutional and tactical insights, and practical mechanisms for the delivery of resilience to vulnerable communities, animals and ecosystems. Topics of the conference include The Environmental and the Political, Environmental justice, sustainable management and sustainable ethics, Property rights and sustainability, Climate change and displacement, Wastes and hazardous substances and Procedural environmental obligations

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## Forthcoming Events

### **Environmental Insurance Claims: The Good, the Bad and the Ugly**

**June 27, 2013**

**London, UK**

The area of environmental claims is shrouded in secrecy, but this forthcoming conference from Brownfield Briefing and insurance broker OAMPS on 27 June shall lift the lid. It is expected that the event will provide an opportunity to hear answers from leading environmental lawyers, barristers, insurance experts, flooding specialists and regulators, to very valid questions like How do consultants defend themselves against PI claims, and how do lawyers defend against statutory pollution claims? What about operational claims under the Environmental Damage Regulations, and what is going on in the world of flooding claims? What are the trends in terms of actions, prosecutions or civil sanctions? How do they cover against contamination and reputational risks?

[<ReadMore>](#)

### **The UK Energy Summit (UKES 2013)**

**27<sup>th</sup> June 2013**

**London, United Kingdom**

The UK Energy Summit is scheduled to take place on June 27, 2013. This summit will bring together leaders from across the energy sector, including policy makers, regulators, energy companies, consumer organizations, NGOs, campaigners, manufacturers, think tanks and investors to openly debate, how the UK can effectively meet the immediate and future challenges viz. The capital challenge, the security challenge and the affordability challenge. This event is sponsored by Bank of America Merrill Lynch and Intelligent energy. High profile speakers from energy sector, academia, environmentalists, NGOs, policy makers are expected to give their deliberations.

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### **European Conference on Sustainability, Energy & the Environment (ECSEE 2013)**

**July 4-7 Brighton,**

**England**

Sustainability has emerged as the most important global issue for business, industry, government, and academia, and yet to begin with sustainability was associated only with environmental concerns such as energy and global warming. It is now recognized that the concept of sustainability is applicable to all areas of human society, for example in terms of social/economic justice, or responsible business practice. Issues such as poverty, hunger, education, health care, and access to markets should be a part of the evolution of any comprehensive sustainability paradigm as we work together to achieve a sustainable future. ECSEE 2013 will address these various dimensions of human sustainability as scholars have been invited from around the world to address questions and search for synergies and solutions to the complex issues surrounding sustainability in a forum encouraging serious and thoughtful exchange between academics, members of the global business community, and practitioners in the fields of human endeavor that link these.

[<ReadMore>](#)

### **Mathematics of Planet Earth 2013: The Conference**

**8th to 12th July 2013**

**Melbourne, VIC, Australia**

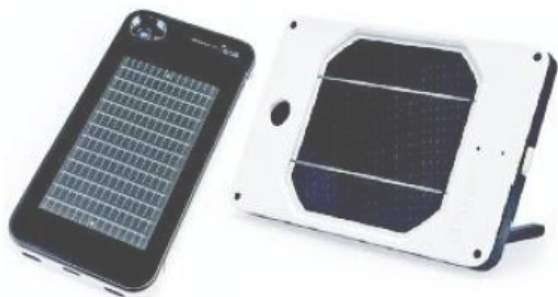
2013 is the International year of Mathematics of Planet Earth. The Australian Mathematical Sciences Institute is teaming up with societies and organizations in Australia to spread the word about the role of maths and stats in understanding the challenges of our world in a fun and accessible way. Mathematics of Planet Earth 2013: The Conference is being organized from 8th to 12th July, 2013, in this some of Australia's top minds are gathering to discuss, how mathematical and related scientific disciplines can be utilized to better understand the world around us. Local and international academics, researchers from Geosciences Australia, the Bureau of Meteorology, CISRO, the Australian Bureau of Statistics and the MPE patron Ian Chubb will join industry representatives in Melbourne for a week of lectures, breakout sessions and networking.

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*The Economic Times, Delhi dated April 26, 2013*

## Mobile Chargers Prepare for their Day in the Sun



Solar tech co offering chargers for less than \$100 that provide power on the go

DIANE CARDWELL

Whether you're comparing restaurant menus while sitting in the park or turning on the air conditioner before getting home, life is becoming increasingly mobile thanks to smartphones and tablets. And with new apps appearing constantly, the possibilities for this kind of connected living could be endless — if only the batteries lasted long enough.

Now, a range of solar technology companies are offering small, portable chargers and accessory cases that provide power on the go. Some are on the market already, while others are in development.

"A mobile life demands mobile power," said Chris Abbruzzese, vice-president for marketing at Goal Zero, which makes a number of solar charging systems, including a kit whose battery can take attachments to become a headlamp, flashlight or fan.

Devices incorporating solar cells or panels into cell phone cases have been available for some time, but it has been a challenge to bring form, function and price to the right levels, analysts say. Not only were earlier models too bulky and expensive to capture the mass market, they also often took too long to charge, especially in the face of improving battery technology.

"In general, the market for aftermarket batteries has not been great, because until now, for the most part, battery life has been getting a little bit better," said

Stephen Baker, vice-president for industry analysis at NPD Group, which tracks consumer behaviour.

But neither has the solar-power market been great, which helps explain the solar push into mobile consumer electronics in the face of what some see as tough odds.

"The solar companies are rushing there, and the reason is because the margins in the conventional markets are really bad," said Matt Feinstein, an analyst at Lux Research, which specialises in emerging technologies. Chargers, some selling for less than \$100, are becoming widely available through retailers like REI, Target and Radio Shack. Some, like the Solio Bolt or the Joos Orange, use a stand-alone solar-charged battery pack that connects to devices through a USB cable. Others, like Ascent Solar's EnerPlex, use solar to charge a protective case, which then can recharge a smartphone.

There are signs that the products are beginning to find an audience. Goal Zero, which offers battery packs that fit in a purse as well as mobile generators that can power a home, says it expects its revenue to double this year to about \$60 million.

The companies have come to the mobile charging business in different ways. Goal Zero, for instance, grew from the humanitarian efforts of Robert Workman. The company uses monocrystalline silicon in its portable panels, which fold into the size of a CD case.

Because of the collapse in silicon-panel manufacturing prices, the company can offer its products at half to a third of what they would have cost three years ago, said Joe Atkin, its chief executive officer.

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*The Economic Times, Delhi dated April 26, 2013*

## Environmental Clearance to Posco Project Revoked

URMIA GOSWAMI  
NEW DELHI

The statutory environment panel has revoked the clearance given to South Korean steel major Posco's Rs 54,000-crore integrated steel plant and port project in Jagatsinghpur in Odisha, raising fears that the venture may get further delayed.

Posco will now have to go through the process of environmental clearance—at least some part of it—all over again.

The expert appraisal committee on industry, which is the apex environmental clearance body for industrial projects, has asked the company to furnish detailed information on a variety of aspects, including iron ore linkage, layout plan for the project, waste management plan before it can consider fresh clearance.

The South Korean steelmaker's project is the single-largest foreign direct investment in the country, and the administration is keen that it takes off the ground as soon as possible.

The decision by the environment panel comes following the recommendations made by the National Green Tribunal-mandated K Roy Paul Committee.

In March 2012, the Green tribunal suspended the final clearance granted in January 2011 and had asked the ministry to constitute a fresh expert committee to look into the project. The K

Roy Paul Committee submitted its report in October.

At its meeting on March 6, the expert appraisal committee noted, "Keeping in view the observations/recommendations made by the said Expert Committee [K Roy Paul committee], the previous recommendation of the Expert Appraisal Committee (Industry -1) for extension of validity period of environment clearance accorded to

M/s Posco India Private Limited has become infructuous."

The panel, which considered the expert report, also heard submissions from Posco and Odisha Industrial Infrastructure Development Corporation, and asked the developers to submit a revised plan for 2,700 acres of land, and mark out the initial plant size of

4 million tonnes per annum and the proposed expansion to a capacity of 12 million tonnes over an area of 4,004 acres.

It also asked for plans for the 33% green belt, documents outlining the iron ore linkage for the plant, commitment for gas linkage for the captive power plant, among other things.



Posco has to seek clearance again after the expert appraisal committee on industry asked it to furnish details on a variety of aspects

*The Times of India, Delhi dated April 27, 2013*

## 5,000 school kids celebrate Earth Week at CM's house

TIMES NEWS NETWORK

New Delhi: A grand carnival organized at chief minister Sheila Dikshit's residence marked the culmination of the Earth Week 2013. The event saw 5,000 children from 400 schools come together to celebrate the theme of re-use, recycle and reduce.

The programme, organized by Delhi's environment department, also saw the release of a poster on 'The common butterflies of Delhi' by WWF, a book on the 'Asola Wildlife Sanctuary' by the Bombay Natural History Society and a book on 'Flora & Fauna at 3, Motilal Nehru

Place' prepared by the environment department.

A nature trail, first made functional in 2006, was also upgraded and re-launched. The trail now boasts of a watch tower, tree and shrub signages, badges and a new illustrated booklet.

A thematic exhibition, 'You can Make a Difference', was also set up by WWF-India to raise awareness about the earth's natural resources and also encouraged the students present there to move towards green-living in the urban environment.

Each student calculated their own 'Earthy Day Quotient' and signed a pledge to

do their bit for Mother Earth.

Speaking on the occasion, Delhi chief minister Sheila Dikshit said that the nature trail has been instilling a spirit of scientific enquiry in the several visitors, enhancing their skill of observation and most importantly it is making them understand matters related to a green environment.

"The trail enables them to learn about different trees, birds, insects, mammals and their relationships with each other in nature. The carnival was an effort to bring awareness on conservation of the nature amongst children," she said.



**GO GREEN:** A poster on common butterflies of Delhi was released by WWF on Friday

*The Times of India, Delhi dated April 29, 2013*

## Super machine to offer unlimited energy

India In Global Team Developing Device To Generate Endless Supply Of Cheap, Clean Power

Kounteya Sinha | TNN

London: India is developing the heaviest and the largest parts of the Tokamak, the machine behind the biggest scientific collaboration on the planet, to produce unlimited supplies of cheap, clean, safe and commercial energy from atomic fusion.

The international nuclear fusion project known as ITER, meaning "the way" in Latin, is based on the 'tokamak' concept of mag-

netic confinement, in which the plasma is contained in a vacuum vessel shaped like a doughnut.

The fuel — a mixture of deuterium and tritium, two isotopes of hydrogen — is heated to temperatures in excess of 150 million degrees Celsius to form a hot plasma.

The temperature within the gigantic machine will, therefore, reach 10 times the temperature at the core of the Sun.

Strong magnetic fields



**HOT PROJECT:** The inside of the machine will be 10 times hotter than the Sun's core

will be used to keep the plasma away from the walls.

India will be one of the significant creators of the Tokamak which will weigh 23,000 tonnes — as heavy as three Eiffel Towers — with a plasma volume of 840 cubic metres.

The main feature of the 180-hectare ITER site in Cadarache, southern France, is a man-made level 42-hectare platform that would be 1 km long and 400 metres wide, and compares in size to 60

soccerfields.

The Tokamak Building will be slightly taller than the Arc de Triomphe in Paris.

Beginning December 2015, the first of the ITER cryostat's components will arrive on site from India.

ITER project ranks as the most ambitious science endeavours of our time. Building began in 2010 in France where 34 nations are collaborating to realize the ITER project's First Plasma in November 2020.

ITER says as part of India's in-kind contribution to the project, these 54 segments are among the largest and heaviest of the whole Tokamak assembly.

They will have to be pre-assembled into four sections before being transported to the Assembly Building. The workshop will be built and operated by the Indian Domestic Agency. ITER-India is the Indian Domestic Agency responsible for the delivery of components.



*The Economic Times, Delhi dated April 30, 2013*

## Climate Talks Begin Amid CO<sub>2</sub> Concerns

**OUR BUREAU  
NEW DELHI**

The latest round of UN-sponsored climate talks kicked off in Bonn on Monday amid mounting concerns of high levels of carbon dioxide in the atmosphere. The Bonn round of talks follows fresh data released by the Scripps Institution of Oceanography in San Diego that carbon dioxide concentration in the atmosphere is set to remain extremely high -- at 400 parts per million, which is considerably higher than 350 ppm limit suggested by scientists to ensure that the earth's temperature doesn't increase by more than 2 degrees.

"We are just about to cross the 400 ppm threshold. Hence, the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP) meets in the context of a heightened sense of urgency," United Nations Framework Convention on Climate Change executive secretary Christiana Figueres said urging negotiators to "do more and do it faster".

The success of the UN's effort to ramp up the efforts to tackle climate change will depend on how much headway negotiators can make on two im-

portant issues—stepping up emission reduction efforts and laying the foundation for a strong global climate change regime after 2020. Jennifer Morgan, director, climate and energy programme at US think tank World Resources Institute described the Bonn meet as "a low key, but important session".

In their submissions ahead of the Bonn meeting, India and other devel-

oping countries have made it clear that the new regime should not become an opportunity to renegotiate the UN convention of climate change. "The future agreement should build on the agreements and institutions that have been developed over the years under the UNFCCC, rather than a renegotiation of the system," South Africa, which along with India and China, is part of the BASIC countries, said in its submission. This view has been reiterated by India.

**The Carbon dioxide concentration is projected to remain at 400 PPM against the prescribed limit of 350 ppm to keep the earth's temperature from rising by more than 2 degrees**

*The Economic Times, Delhi dated May 01, 2013*

## Clean Energy Should Power Asian Century



**Changyong Rhee**

**Emphasise on regional energy markets, utilise shale gas reserves**

Asia's rise is increasingly considered a foregone conclusion, yet the extent to which the region will prosper hinges on its ability to feed its voracious appetite for energy. Asia faces a seemingly irreconcilable paradox: if it can somehow secure sufficient energy resources to maintain robust growth, it will decisively boost rising global CO<sub>2</sub> levels in the process, with enormous economic and social costs.

If developing Asia maintains 6% annual growth, its share of world GDP will increase from 23% to 44% by 2035, with the energy consumption rising to 56% over the same timeframe.

Consumption needs could be even greater, as Asia's leaders face the imperative of ensuring affordable energy for the poor. Yet, getting people connected will require a fivefold increase in yearly energy investments.

### Carbon Blot

The region's desperate need for more energy is problematic for other reasons. The region may possess a quarter of world coal reserves, but it has only 16% of conventional gas reserves and 15% of technically recoverable oil and natural gas liquids. To bridge this gap, it will have to triple oil imports by 2035, rendering it even more vulnerable to external energy price shocks.

If Asia maintains its current energy mix, coal use will increase by 81%, oil consumption will double, and natural gas use will more than triple. This would raise energy-related CO<sub>2</sub> emissions to more than 20 billion tonnes — nearly the level seen by climate change experts as barely globally sustainable — by 2035. In effect, Asia's emissions alone would swamp global targets.

The truth is that Asia must act now if it wants power inclusive, sustainable growth this century. Replacing inefficient general fuel

subsidies with targeted subsidies, as pioneered by Indonesia, should be the first step. Consumer fuel subsidies impose a tremendous burden on public budgets, exceeding 4% of GDP in Bangladesh and Pakistan, and 2% in India and Indonesia. Those who benefit from subsidies — and invariably resist scrapping them — are rarely the poor.

We should not underestimate the importance of behavioural change in managing demand. After Fukushima, Japan succeeded in curbing electricity demand through the *Setuden* ("saving electricity") movement, lowering peak usage by 15% during the summer of 2012.

### Shale Shale

Delivering cleaner energy is also key. In less than a decade, generating capacity rose from negligible to 82 gigawatts (GW) for wind and to 20 GW for solar, with great potential to further expand both. But many experts predict that it will take decades for them to be commercially cost competitive. Asia can't and shouldn't wait, however. The only way forward is to make conventional energy cleaner and more efficient now.

One feasible possibility is for Asia to utilise its reserves of shale gas to offset coal use. Indications are that China has the world's largest shale gas resources — nearly 20% of the total. With India and Pakistan possessing sizeable shale gas reserves, unconventional gas could provide a cleaner bridge to a future that is less dependent on fossil fuels.

Asia faces a dilemma over nuclear power after Fukushima. But if nuclear energy is replaced by current energy mix, CO<sub>2</sub> emissions from Asia's power sector would rise 8-13% higher by 2035.

More than anything, regional integration of energy markets can have great benefits. Connecting electricity and gas grids across borders can create economies of scale that improve efficiency. The region must strive to establish a Pan-Asian Energy Market by 2030, aspiring to the degree of regional cooperation that currently prevails in Europe.

The reality is that Asia is on an unsustainable path where growth trumps environmental costs. But eventually this imbalance will erode Asia's gains. Action is needed if the Clean Asian Century is to be more than just a slogan.

*The writer is chief economist, ADB*



*The Economic Times, Delhi dated May 01, 2013*

# Renewable Energy Sector Draws \$500-M Investments This Year

## Renewable Energy Deals So Far in 2013

### EQUITY FUNDING

**AN AFFILIATE OF** Singapore's GIC to invest \$150 million in Greenko

**GUJARAT VENTURE** Finance picks up a stake in a SPV of UK-based SITAC group, which is executing a \$47-mn 50 MW wind project in Gujarat

### DEBT FUNDING

**CONTINUUM WIND** Energy secures \$164-million loan from SBI for its 175 MW wind project in Maharashtra

**SUZLON ENERGY** raises \$647 million in a bond issue by SBI and JPMorgan

### M&A ACTIVITIES

**MYTRAH ENERGY** to buy 59.75 MW of wind projects in Tamil Nadu and Maharashtra for undisclosed amount

**BHARAT LIGHT & Power** acquires 150 MW wind projects in Gujarat from DLF for \$53 million

**RACHITA PRASAD**  
MUMBAI

The renewable energy sector in India, led by the wind energy segment, is seeing a rebound in investment with around five deals worth \$500 million (approximately ₹3,000 crore) being sealed in 2013. In contrast, there has not been a single deal in the conventional energy segment.

"Investors are shying away from conventional energy due to policy uncertainties and lack of fuel linkage. While the government has been flat-footed on thermal energy, it is encouraging renewable energy, making the sector attractive for investors," said Vish Narain, partner at global private investment firm TPG.

In March, an affiliate of the Government of Singapore Investment Corporation (GIC) sealed a pact to invest \$150 million in Greenko. The deal, the only \$100-million-plus deal so far in the year, will enable Greenko to expedite its wind power projects.

India plans to double its renewable energy capacity to 55,000 MW by 2017 to reduce its dependence on fossil fuel. In the past few years, the wind energy sector has prospered even as other sectors have missed targets due to sops such as generation-based incentives (GBI) and accelerated depreciation (AD). The government rolled back both incentives in April 2012 only to reintroduce GBI, which gives independent power producers monetary benefit on every unit

generated in April 2013.

"Wind energy has been established in India and is now entering a phase of consolidation. Serious players who are in the sector for pure play generation would increasingly look at mergers and acquisition opportunities as non-serious players who entered the sector for tax breaks look for an exit," said Hemal Zobalia, partner, KPMG India.

Real estate major DLF, as part of its strategy to exit non-core businesses, sold three of its wind farms for ₹500 crore to Bharat Light and Power, Tulip Renewable Power-tech, and Violet Green Power respectively. Debt-laden Lanco Infratech is also in talks to exit its wind energy business.

Not just investment activity, M&A activity is also quite robust as Mercom Capital Group said in a recent release: "Wind sector had a strong 2012 globally with about 45 GW in installations during an uncertain year on the policy front. In India, funding and M&A activity in the wind energy sector in the first quarter of 2013 was active with transactions in project, debt and other funding as well as project merger and acquisition."

India has an ambitious target of acquiring 15% of power needs, or 80,000 MW, from renewable sources by 2020. Wind energy is pegged as a key growth driver with the sector targeting 15,000 MW of new capacity in the next five years. India has a total installed renewable energy capacity of 26,000 MW, which comprises mainly wind power of 18,275 MW.

*The Economic Times,  
Delhi dated May 01,  
2013*

## Solar Power Producers Oppose Any Anti-Dumping Duty on Imported Gears

**SHREYA JAI**  
NEW DELHI

Ten solar power producers, including Jackson Ltd, Vikram Solar, Symphony Vyapar Pvt Ltd and Lexicon Vanijya Pvt Ltd have written to the ministry of new and renewable energy (MNRE) saying imposition of anti-dumping duty on solar imports will severely affect the fledgling Indian solar industry.

Producers and equipment manufacturers have been at loggerheads since the latter filed an anti-dumping case against China, the US, Taiwan and Malaysia last year for imported solar panels. Producers have called a halt to such measures till phase two of the national solar mission begins and new projects are commissioned.

Stuck between the two, the government is trying to strike the right balance. "We want the domestic industry to be protected and on the other hand we also hope to make solar power available at cheaper



rates and grid parity to be achieved quite soon," said Tarun Kapoor, joint secretary, ministry of new and renewable energy.

For phase two, the government plans to keep aside a certain amount of projects to be developed from domestic content. Senior officials say this is likely to be just 200-250 MW out of 750 MW, which will be tendered out in May.

According to the guidelines of the first phase of the solar mission under which the above mentioned companies commissioned their projects, producers could either mandatorily source CSI (crystalline silicon) solar cells from the domestic market or source thin-film

technology from any country.

Because of the lower cost and the belief that thin film technology works better in a hot climate, producers preferred to buy imported solar panels which made manufacturers cry foul. Producers also said domestic solar cells were less efficient and with Indian cell prices going up, higher project costs put the viability of the projects under tremendous pressure.

"Indian cells have an efficiency of 15.5 to 16.5% whereas internationally, cells are available with an efficiency of above 17%. Low efficiency cells involve higher project cost," said one of the letters seen by ET.

In the last batch of the projects sanctioned in the first phase, 75% of the projects used thin-film technology imported from the US, China, Taiwan etc., as this type of solar panel is not manufactured in India. That is when domestic manufacturers filed an anti-dumping case against these countries. The amount of imports of solar cells and modules in India increased from 920 MW in 2011 to 1,050 MW in 2012.



The Times of India, Mumbai dated May 02, 2013

## HC to hear test PIL on green concern

Rosy Sequeira | INN

Mumbai: Bombay HC will hear a PIL as a test case to determine whether grievances raised in it are related to the National Green Tribunal or should be heard by it.

A division bench of Justice V M Kanade and Justice FM Reis on Tuesday heard a plea by Parshuram Uparkar, an ex-MLC, challenging the authority of the Maharashtra Maritime Board to allot

wharfs to a private party for setting up a multipurpose jetty near Aronda village in Terahol creek in Sawantwadi.

The PIL said the jetty is being built by White Orchid Estates Pvt Ltd. It alleged that the maritime board had leased the waterfront in an arbitrary manner and in violation of government notification permitting private parties to set up ports.

Uparkar's counsel Navroze Seervai and advocate

Akash Rebello argued for ad interim relief, saying no environment nod was taken either from the state or the Centre. "The port is being set up 2 km from the border of Goa,"

### PORT OF CALL

he said. He also said White Orchid was unqualified for the contract. "When the tender was invited, except Respondent 8 (White Orchid), nobody responded," he said.

Seervai said White Orchid had applied for lease modification, stating that a part of the waterfront was reserved for fisheries. "In the guise of lease modification, the policy was violated and no fresh tender issued. They are saying it is an existing jetty, so no permissions are required. Google map shows there is no wharf," he said.

The judges said the Supreme Court has said all matters related to environment

should be sent to the NGT and asked how they could hear this case. White Orchid's advocates Ashutosh Kumbhakoni and Ashutosh Gavnekar said the petitioner has demarcated his case into two parts, namely tender documents, Bombay Land Tenancy Act and Regulations and secondly, regarding CRZ nod and effects of coastal development on the environment. The next hearing is on Thursday.

The Economic Times, Delhi, dated May 03, 2013

## Japanese Loans Only After Green Nod

YASHODHARA DASGUPTA  
NEW DELHI

Japan, which funds infrastructure projects in India through its development assistance arm, the Japanese International Cooperation Agency (JICA), says it will now sign loan agreements only when most of the land acquisition and environment clearance is done. It will also increase funding if projects are implemented on time or in a smooth way.

"We are trying to sign loan agreements once environment clearance is given to the project and most of the land acquisition is done — not 100% but the major part. This is a lesson learnt from past experience," said Shinya Ejima, chief representative for JICA in India.

Multiple infrastructure projects in India have stalled because of a maze of approvals, delay in environment clearance

and land acquisition taking years to come through. JICA lends money to the government for projects funded through public money.

While JICA, which has almost trebled its loan amount in the past decade, is committed to financing infrastructure projects, it will only increase the level of lending if projects are on track faster.

On the table are metro rail projects in Delhi, Kolkata, Mumbai, Bangalore and Chennai but commuters may have to wait till the agency will decide how much to lend after reviewing the ongoing phases of the projects.

"Environment clearance is definitely needed for infrastructure projects and land acquisition must be done within the democratic system. If the government or the project executing agency skips the procedure, it creates repercussions after the implementation. We have guidelines on environment and social

consideration which must be complied with," Ejima said.

JICA lent about ₹18,200 crore (at the current exchange rate) in 2012 and in March. "We are trying to maintain this level for the next five to 10 years. An increase in financing will depend on our own capacity as well as the absorptive capacity of the executing agencies in India," said the agency representative adding that the project executing bodies and state governments must implement projects on time or at least smoothly

In the past 10 years, the Japanese agency has committed a total of JPY 2,065 B

for the financial assistance to be increased further.

JICA is focusing on the Delhi-Mumbai and Chennai-Bangalore industrial corridors apart from a few other infrastructure projects. It is in talks with the gov-

ernment on which project to take up next and which ones should be funded with public money. About 640 km of the JICA funded first phase of the western freight corridor along the DMIC is in the process of financial bid evaluation and the remaining 230 km stretch is in the technical bidding stage.

In the past 10 years, the agency has committed a total of JPY 2,065 billion, which at the current exchange rate, would amount to ₹1.14 lakh crore. The bulk of this has been for the infrastructure sector — about 49% of its total assistance since 2002 has gone into transportation projects and 20% to the power sector.

This March, the Japanese agency agreed to give the Indian government soft loans up to ₹11,400 crore, a big chunk of which will be used for building the Dedicated Freight Corridor.

yashodhara.dasgupta@times-group.com



The Economic Times, Delhi, Dated May 04, 2013

## Worried About Global Warming? First Dress Down

Gender equality and a re-imagined formal attire for warm climes could cut power spent on cooling interiors

TK ARUN  
NEW DELHI

Sartorial inequality between the genders is a cause for climate change. When it comes to formal dressing, women tend to cover themselves lightly if not minimally while men feel obliged to wear a jacket and tie, even in the summer warmth of tropical India. When they share the same air-conditioned room, another sort of gender inequality ensures the temperature is kept at a level that makes suited men comfortable, even if it leaves the fairer sex covered with goosebumps.

If the men were to shed a few layers

of clothing, the room temperature could be raised by at least 2 degrees centigrade. The power saved on air-conditioning across millions of sq ft of built-up space would be a lot. Power saved is carbon-dioxide emissions averted. A little gender equality, combined with a little daring in re-imagining formal attire in warm climates, would go a long way in reducing the energy spent on cooling interiors.

This, of course, is not a novel idea. Junichiro Koizumi, Japan's prime minister during 2001-2006, asked Japanese men to shed their suits and went around in shirtsleeves. It took the Fukushima disaster and subsequent power shortages for the idea

to gain real traction.

India has a little less than 1,000 million sq ft of Grade A built-up public space. It breaks up something like this: Officespace: Grade A 360 million sq ft; Grade B 360 million sq ft. IT campuses: 100 million sq ft. Retail Malls: Grade A 60 million sq ft. Hotels: 24 million sq ft. Total: 924 mn sq ft.

The power needed to cool this space for an average of eight hours a day for 120 days a year is roughly 8,574,720,000 kwh. The corresponding emission of carbon-dioxide is roughly 656,000 tonnes, at the rate of 0.7655 tonnes per 1,000 kwh.

Assume air-conditioned spaces are kept 15 degrees below the temperature outside on average. Suppose shedding extra layers of male clothing will allow the temperature inside to go up 3 degrees. That means a 20% savings in power and carbon-dioxide emissions. Even a 10% saving would still avoid nearly 65,000 tonnes of carbon dioxide.

Of course, women can close the gender gap in air-conditioning temperatures without men stripping for climate change. They can ape the men and swap their present gossamer fabrics or backless cholis for the formal jacket and trousers.

Your choice, gentlemen.





*The Economic Times, Delhi, Dated May 06, 2013*

*Deccan Chronicle, Hyderabad  
Dated May 07, 2013*



Environment ministry does not evaluate cumulative environmental impact of multiple dams in a region. Funded by the project proponent, the EIA report of a project too downplays the environmental costs, reports **M Rajshekhar**

# Dam Frenzy Fails to Notice Environmental Concerns

Housed in the ministry of environment and forests is a quasi-independent body whose job is to scrutinise every hydel-power project for environmental damage. In its six years, the hydel environmental assessment committee (EAC) has evaluated 262 hydropower plants and irrigation projects, according to a February 2013 study by the South Asia Network on Dams, Rivers and People, a Delhi-based anti-dam organisation. It hasn't rejected a single one.

The prospect of a similar rate of clearance in Arunachal is alarming researchers, activists and residents, who say projects are being cleared on an individual basis, without fully understanding the possible cumulative environmental fallout of such a large build-up. Take what will happen to the Lohit, which flows out of Arunachal and into the Brahmaputra, when the Lower Demwe Hydro Electric Project on it switches on. According to the project's environmental impact assessment (EIA) report, the Lohit's flow is around 463 cubic metres per second (cumecs) in winter, 832 cumecs in summer and 2,050 cumecs in the rains. (A 3 cumecs flow is akin to a Tata Nano passing you every second.)

This will change once the dam comes up. For up to 20 hours a day, says the report, the dam will trap the river, releasing just 35 cumecs. The remaining will be released to spin the turbines only when demand for electricity rises in the evening. At that time, the river's flow will expand to 1,729 cumecs. As the reservoir empties out, the river will again shrink to 35 cumecs.

River flows ebb and rise over months. "But now, what was an annual variation will now be a daily variation," says MD Madhusudan, a biologist with Mysore-based Nature Conservation Foundation. And this is from just one dam; there are 153 dams coming up on Arunachal's eight rivers.

To gauge their combined impact, rifle through the EIA report for the Jaypee Group's Lower Siang Project. It says if waters from the three terminal dams on the Lohit, Subansiri and the Siang rivers reach the floodplains at the same time, the Brahmaputra's height will fluctuate daily by 2.3 metres, as far as 65 km downstream. This unpredictability of flow will affect fishing communities and those farming in the Brahmaputra's floodplains.

There are other concerns. On the Lohit, for example, the distance between six dams is 1 km, 9.5 km, 1.8 km, 3.8 km and 1.8 km, respectively. There are no studies on what such clustering portends for a river or how they will behave during a quake.

This part of the country is rocked by an earthquake over 8 on the Richter scale once every 100 years or so. "Now, there will be a series of cascading dams, each with a small reservoir, on each river," says Chandan Mahanta, a professor of environmental engineering and engineering geology at IIT Guwahati. "These are things people have not seen. We need more simulation."

"The issues surrounding these dams are very different from those relating to dams in the plains," adds Dulal Goswami, a former member of the hydel EAC. "There, the main issues are relocation, rehabilitation and inundation. Here, the issues are seismicity, landslides and flashfloods."

## SCIENTIFIC NORMS?

These issues are not getting the attention they deserve from the ministry. For instance, the ministry has set the minimum distance between two dams at 1 km; the minimum flow of a river at all times at 20% of its lowest seasonal flow; and it is evaluating project impact for 10 km, upstream and downstream. How did it arrive at these standards?

Jayanthi Natarajan, the minister of environment and forests, did not respond to an email questionnaire on the issue. But a senior hydel EAC member, who did not want to be named, says norm-setting is a problem. "The power ministry has the Central Electricity Authority (CEA) advising it. The ministry of environment has nothing," he says. "The EAC has just worked out some (hydel) norms on its own."

At times, members of hydel EAC are also involved with private projects, raising the issue of conflict of interest. Then, the primary source of information about a project's environmental costs is its own EIA report. Funded by the project proponent, these inevitably downplay environmental costs.

In 2012, the Nature Conservation Foundation assessed the EIA report of Bihlwa Energy's Nyamjang Chhu project, prepared by two agencies. "The EIA

## Indifference to a Region's Future

- In Arunachal, 153 dams have been allotted on 8 rivers
- People connected with hydel projects sit on the key ministry body clearing projects
- No cumulative impact assessment of these projects
- No clarity on what basis the minimum distance between two dams has been fixed at 1 km

## Death Knell

The Lohit's flow is around 463 cubic metres per second (cumecs) in winter, 832 cumecs in summer and 2,050 cumecs in the rains. Once the dam comes up, only 35 cumecs will be released for up to 20 hours a day. There will be 152 more dams across Arunachal

## Ticking Bomb

No concerns for high seismic activity in the region

On the Lohit, the distance between six dams is 1 km, 9.5 km, 1.8 km, 3.8 km and 1.8 km, respectively. There are no studies on what such clustering portends for a river or how they will behave during a quake

The issues surrounding these dams are very different from those relating to dams in the plains. There, the main issues are relocation, rehabilitation and inundation. Here, the issues are seismicity, landslides and flashfloods

Dulal Goswami, Ex-member, Hydel EAC

GEETANJALI

report lists 16 fish species by Wapcos (one agency) and 16 by the other agency. Surprisingly, only 3 species are common," it says. And the downstream impact does not get much of a discussion.

The ministry also does not do cumulative assessments for a river or a region. The unidentified hydel EAC member quoted above says the EAC can only suggest one to the minister, which it has not. "A cumulative assessment would delay all project clearances by two years," he says.

Limited information on water flows for most Arunachal rivers increases the difficulty of conducting an objective cumulative assessment. "The CWC (Central Water Commission) had not studied all the major rivers and their tributaries," says Kameswara Rao, executive director, PricewaterhouseCoopers.

With data available only for the last three to four years, most companies are resorting to, in Rao's words, "borrowed hydrology" — calculating water flow, etc, by looking at the flow in the major river. Adds Goswami: "If a dam's hydrology has been overstated, it will not be as profitable as envisaged." This is why he says, the EIA studies cannot be done by project proponents.

## DOWNSTREAM CONCERNS

One cost of not addressing these concerns beforehand is an in-

crease in disputes. Take NHPC's Lower Subansiri Project, coming up near the Assam border in the lower reaches of the Subansiri. It is causing large worries in Assam, where protestors have held up work on the dam for over a year now.

Their concerns stem from the 1950 quake, after which landslides had blocked the river's path very close to the Lower Subansiri project site. For three days, the water backed up. When it burst through, it devastated downstream Assam. And yet, the lack of downstream studies has meant no public hearings were held to address the concerns of downstream populations. "It is ridiculous," says Goswami. "Assam doesn't feature in these studies at all."

Or take the river flows. According to the EIA report for Lower Demwe, if no minimum flows are maintained, the dam can generate peaking power for 5.4-8.3 hours a day. However, if it has to release 20% of the water as an environmental flow, this drops to 4.3-5.4 hours.

The Association of Arunachal Power Producers has written to the ministry of power objecting to the EAC's insistence on 20-30% being the minimum environmental flow, saying this will reduce power capacity and generation by 15-25%. The EAC official says these questions will have to be resolved politically. "Do we want

peaking power or normal riverine flows?"

A political argument put forward for building many dams in the north-east, and quickly, is China. In August 2010, former environment minister Jairam Ramesh told the Rajya Sabha that the dams also had "strategic importance". "If we don't build dams on the Siang river, our claim from China will weaken."

However, many dams have been allotted even on rivers that, unlike the Siang, originate in India and flow into China. Also, "prior use was discredited long ago," says Philippe Cullet, a professor of international environmental law at London's School of Oriental and African Studies. "The whole point of the negotiations leading to the UN Watercourses Convention 1997 was to move away from both the 'Harmon doctrine' (upper riparian claiming to do whatever it wants) and from prior use (lower riparian claiming full share of the water) in favour of a balanced approach where both the upper and lower riparian could find something that would match their expectations." While this convention is still not in force, he adds, its basic principles are widely recognised as being international customary law.

(Go to [www.economictimes.com](http://www.economictimes.com) for a longer version of this story)

m.rajshekh@timesgroup.com

## Human impact study not done

DC CORRESPONDENT  
HYDERABAD, MAY 6

When setting up a power plant, the cost factor and subsequent energy outputs are invariably highlighted to justify setting up the plant, but the impact on human health such as lung and other cancers, and childhood asthma is never mentioned.

Epidemiology studies (studying the impact on human health both in terms of death and diseases) are an essential part of project proposals, but the environmental loss is simply ignored currently. Pollution Control Boards tasked with doing such studies are just not equipped to do so, having no expertise in the field.

The 6000 MW proposed nuclear power plant in Kovvada terms of reference for the EIA (Environment Impact Assessment) as specified by the Nuclear Power Corporation of India Limited also mandates environmental costing. While nuclear plants

come under the purview of the NPCIL, thermal plants come under the purview of the pollution control boards.

The impact on health in many cases, as in nuclear plants, is inter-generational and therefore requires long term epidemiological studies to be done before claiming that there will be no adverse impact on health. Air pollution from thermal power plants, which use coal as fuel, can cause lung cancer, asthma, skin and other forms of cancer.

Nuclear power plants poison soil, water, salt (made in salt pans) and even milk that comes from cattle feeding on grass that has metal deposits.

"There is a need for such studies but there is serious lack of expertise in the area. This is not taught in any institution as a field of study in the State. It is only institutions such as the UN and World Bank that do such studies for sponsored projects across countries," said Dr. Prasanna Kumar, Social scientist APPCB.



Deccan Chronicle, Hyderabad, Dated May 07, 2013

## Overlooked 'environment'

■ Nuclear power projects with budgets above ₹1 lakh crore fail to account for environmental costs

AMRITA DIDYALA | DC  
HYDERABAD, MAY 6

In all planning of power plants such as the gamut of thermal power plants proposed in Krishnapatnam and the nuclear power plant proposed in Kovvada, there is no estimate of the environmental cost, which means the impact on environment — money spent on treating diseases, de-polluting water bodies, loss of agriculture resulting in food crisis, etc.

While the world over stresses on the environmental cost, and the long term impact on ecology and human life, mega projects like the nuclear power plant with a proposed budget of ₹10,000 crores do not talk about it. Experts say that the reason is that pollution control boards do not have a mandate to make such estimates as done in other countries.



Salt pan at the thermal plant in Krishnapatnam.

Moreover, the AP PCB has never, till date, struck down any project (industry or power plants) based on the impact that it may be causing on the environment as per data.

The Environment Protection Act, for example, does not have any mandatory clause for the estimation of the environmental impact of any proposed power project. "It is true that there is no estimation of the environmental cost when any proposal is made to the AP Pollution

Control Board. Generally once the environmental impact assessment is done, an environment management plan is worked out to handle the impact. No epidemiological studies are done to quantify the loss to the environment and human health as is done in some advanced countries," points out social scientist from the AP PCB, Dr. Prasanna Kumar.

In fact, in some parts of Europe and US, the term DALY (Disease Adjusted

Life Years) features prominently in project proposals. Impact on human health, loss to crops, forest cover and impact of drying up of water bodies are also quantified in terms of money.

Dr. Sagar Dhara, as a member of the EIA task force set up by the Planning Commission to reform the environment impact assessment suggested in 2006 that the EIA should be passed through environmental costing as a criteria. He said, "A risk standard for acceptable carcinogenic and non-carcinogenic toxic risks, allowable ecological footprint (eco-footprint) standard, area vulnerability standard, conflict potential standard and an allowable cost to the environment standard should be made."

However, these aspects are totally unheeded in pollution control boards across the country.

Fly-ash residue and pollutants settle on soil contaminating areas and are especially harmful to agricultural activities. Most importantly for human health, combustion of coal releases emissions of sulphur dioxide, nitrogen oxide, particulate matter, carbon monoxide, volatile organic compounds and various trace metals like mercury, into the air through stacks that can disperse this pollution over large areas. Chronic and acute exposure to these pollutants has health impacts including respiratory illnesses.

— Dr. Sarath Guttikunda, former air pollution analyst at the World Bank and director of Urban Emissions

The Economic Times, Delhi,  
Dated May 08, 2013

BUSINESS: Gujarat, Maharashtra identified as growth areas; Goa the next target

## Log house trend catches on

Eco-friendly wooden houses imported from Siberia are finding a new niche market in India.

ALEXANDRA KATZ  
RIBB

Russian log houses are poised to carve a niche market in India. Costlier than cement-and-concrete houses, but economical and more efficient in the long run, the log house is catching the fancy of buyers in many places in India, with Gujarat and Maharashtra showing the way.

A host of companies has smelt an opportunity in Siberian forests. Leading the pack is Mumbai-based Maharaja Environment Technologies Pvt Ltd, whose Russia-educated director, Prabhat Ranjan Dubey, is in the forefront of selling the log house dream to rich Indians. His company imports Russian log houses from Siberia and has partnered with JSC "KLM Co", one of the largest timber companies in the central Siberian region of Krasnoyarsk. With large logging and timber processing units and distributional companies, KLM sells its products both domestically and in Europe, China, Japan, Egypt and Turkey. India is the latest international market.

"The advantage of a wooden house is that it will keep you warm all winter long and cool during hot summer. It really suits the Indian climate," says Dubey, an alumnus of a Russian university. "In Siberia we live in the continental climate with an average annual temperature fluctuation close to 100 degrees, from -50 °C till +35 °C in winter and upto +45 °C in summer," says Irina Bor, commercial director at KLM. "The fact that our wooden houses can be used in such different climate conditions attracted attention in many countries. We became competitive, technologically and financially, with products from Scandinavia and other countries."

In India, ready-to-assemble logs are imported from Russia and then as-



A log house, imported from Russia, is being assembled in India by Russia-trained Indian workers.

# Rs.15

million is the average cost of building a log house in India, which is assembled in the country after being imported from Russia.

sembled at the spot by Maharaja's local workforce that has received special training in Russia. Mumbai-based Irina Kirillova, a Russian official at Maharaja, says a standard log house can be assembled by 5 to 10 people within a month. It, however, takes almost five months from the moment an order is placed till the finished house can be handed over to the customer.

Maharaja has show houses in Panvel, the outskirts of Navi Mumbai,

and Lonavla. The company positions its wooden houses as a second home or a weekend residence. The cost of a wooden log house in India works out to around Rs 3000 per square foot, double of the cement construction cost. "Comparing to the concrete construction where one has to pay for finishing first and further for maintenance, wooden house becomes even a cheaper option ten years down the line," says Manish Wakde of Katayani Infracon. He estimates the cost of concrete building along with finishing as about Rs 3650 per square foot, while wooden houses will cost somewhere around Rs 4000-4500 per square foot. Agrees Irina Bor of KLM: "If a wooden house was assembled properly, it will stay as it is for 70-100 years."

Wakde hopes to reach projected sales target of 50-60 houses per year

in 2013, targeting customers ready to pay Rs. 1.5-2 crore for a log house. In Gujarat, Maharaja has partnered with India Green Reality Pvt Ltd based in Ahmedabad.

The company is developing two projects in Gujarat and Kolkata under the name of Green Reality Eco Village. "In Gujarat, we are planning to build about 300 houses. In Kolkata, we plan to develop a 300-acre residential complex. There, we were also planning to build log cottages," says Vinod Thakur, a director at Green Reality Pvt Ltd.

Maharaja is also eyeing north and northeast India. "Goa is an ideal place for wooden resorts as cement construction is not allowed in many areas, mostly near the sea shore. We have about 500 clients all over India. But this is just the initial stage of market penetration," says Kirillova.



*The Times of India, Delhi, Dated May 09, 2013*

# Streetlamps out, glowing trees to light up roads?

## Biotechnology Hobbyists, Entrepreneurs In US To Develop Luminous Plants By Using Genetic Engineering

Andrew Pollack

Hoping to give new meaning to the term "natural light," a small group of biotechnology hobbyists and entrepreneurs has started a project to develop plants that glow, potentially leading the way for trees that can replace electric streetlamps and potted flowers luminous enough to read by.

The project, which will use a sophisticated form of genetic engineering called synthetic biology, is attracting attention not only for its audacious goal, but for how it is being carried out.

Rather than being the work of a corporation or an academic laboratory, it will be done by a small group of hobbyist scientists in one of the growing number of communal laboratories springing up around the nation as biotechnology becomes cheap enough to give rise to a do-it-yourself movement.

The project is also being fi-



**BOON OR BANE?** Critics of the project fear that malicious organisms may be created by tweaking genes, either intentionally or by accident

nanced in a DIY sort of way: It has attracted more than \$250,000 in pledges from about 4,500 donors in about two weeks on the website Kickstarter.

The effort is not the first of its kind. A university group created a glowing tobacco plant a few years ago by implanting genes

from a marine bacterium that emits light. But the light was so dim that it could be perceived only if one observed the plant for at least five minutes in a dark room.

The new project's goals, at least initially, are similarly modest. "We hope to have a plant which you can visibly see in the

dark (like glow-in-the-dark paint), but don't expect to replace your light bulbs with version 1.0," the project's Kickstarter pages says.

But part of the goal is more controversial: to publicize do-it-yourself synthetic biology and to "inspire others to create new living things". As promising as that might seem to some, critics are alarmed at the idea of tinkers creating living things in their garages. They fear that malicious organisms may be created, either intentionally or by accident. Two environmental organizations, Friends of the Earth and the ETC Group, have written to Kickstarter and to the agriculture department, which regulates genetically modified crops, in an effort to shut down the glowing plant effort.

The project "will likely result in widespread, random and uncontrolled release of bioengineered seeds and plants produced through the controversial

and risky techniques of synthetic biology," the two groups said in their letter demanding that Kickstarter remove the project from its website.

They note that the project has pledged to deliver seeds to many of its 4,000 contributors, making it perhaps the "first-ever intentional environmental release of an avowedly 'synthetic biology' organism anywhere in the world". Kickstarter told the critics to take up their concerns with the project's organizers. The agriculture department has not yet replied.

Antony Evans, the manager of the glowing plant project, said in an interview that the activity would be safe. "What we are doing is very identical to what has been done in research laboratories for 20 years," he said. Still, he added, "We are very cognizant of the precedent we are setting" with the do-it-yourself project and that some of the money raised would be used to explore

public policy issues.

Synthetic biology is a nebulous term and it is difficult to say how, if at all, it differs from genetic engineering. In its simplest form, genetic engineering involves snipping a gene out of one organism and pasting it into the DNA of another. Synthetic biology typically involves synthesizing the DNA to be inserted, providing flexibility to go beyond the genes found in nature.

The glowing plant project is the brainchild of Evans, a technology entrepreneur in San Francisco, and Omri Amirav-Drory, a biochemist. They met at Singularity University, a programme that introduces entrepreneurs to futuristic technology. Amirav-Drory runs a company called Genome Compiler, which makes a program that can be used to design DNA sequences. When the sequence is done, it is transmitted to a mail-order foundry that synthesizes the DNA. NYT NEWS SERVICE

*The Times of India, Delhi, Dated May 10, 2013*

# Now, steel is tempered the green way

## MIT Researchers Use Soil From A Meteor Crater To Reduce Carbon Footprint

Kounteya Sinha | TNN

London: Scientists may have found a way to reduce smoke emissions created during the process of forging steel.

A new process developed by MIT researchers could change the image of steelmaking as one of the world's leading industrial sources of greenhouse gases.

The new procedure may even carry some nice side benefits as the resulting steel could be of higher purity and the process may also work out to be cheaper once it is scaled.

Donald Sadoway, professor of materials chemistry at MIT says this could be a significant "win, win, win" proposition.

Sadoway found that a process called molten oxide electrolysis



**HOT PROBLEM:** Steel industry is one of the world's leading industrial sources of greenhouse gases

could use iron oxide from the lunar soil to create oxygen with no special chemistry. He tested the

process using lunar-like soil from a meteor crater in Arizona — where an asteroid crashed

thousands of years ago and which contains iron oxide—and found that it produced steel as a byproduct.

Sadoway's method used an iridium anode. Iridium is expensive and limited in supply so it is not viable for bulk steel production on Earth. But after more research, the MIT team identified an inexpensive metal alloy that can replace the iridium anode in molten oxide electrolysis.

"It wasn't an easy problem to solve," Sadoway said, adding, "Because a vat of molten iron oxide must be kept at about 1600 degrees Celsius, it is a really challenging environment. The melt is extremely aggressive. Oxygen is quick to attack the metal."

The paper is co-authored by Antoine Allanore and has just

been published.

Worldwide steel production is about 1.5 billion tons per year. The current process uses iron ore — mostly iron oxide — by heating it with carbon and carbon dioxide is created as a by-product. Production of a ton of steel generates almost two tons of CO2 emissions, according to steel industry figures and accounts for nearly 5% of the world's total greenhouse-gas emissions.

The industry has met little success in its search for carbon-free methods of manufacturing steel. Sadoway says the idea arose when he received a grant from Nasa to look for ways of producing oxygen on the moon — a key step needed to establish lunar bases in future.



Deccan Chronicle, Hyderabad, Dated May 10, 2013

The Economic Times, Delhi, Dated May 11, 2013

## A stove expert

RAJITA GODASU

DECCAN CHRONICLE

A hefty pay-cheque for working in cubicles didn't amuse this IITian from Mumbai, Dr Sai Bhaskar Reddy, who set off on a spree designing stoves for the poor. His book *Understanding Stoves*, which earned him the tag of 'The Stove Man', throws light on stoves, their design and efficiencies.

Bhaskar Reddy has designed over 50 eco-friendly stoves that can improve fuel efficiency by 60-70 per cent. These stoves, mostly produced from waste raw materials, are priced at ₹200-₹300 per piece.

"When I visited villages in the Mahabubnagar district, I found people were still using the traditional stoves in small kitchens without chimneys. People and lifestyles have changed, except for the stoves, which still emanate smoke."

These observations led him to tread the unconventional path of designing stoves, which are also patent free. He shares all his designs on [goodstove.com](http://goodstove.com) to create awareness among users. "We cannot patent everything. Especially basic things like food, clothes, water etc. I design stoves for people who mostly reside in rural areas. They can go through the blog and make their own stoves using easily available materi-



**POWER STOVES** Models of two of the 50 stoves that Dr Sai Bhaskar Reddy has designed

als," adds Dr Reddy. His research centre at Jangoan, Warangal, has volunteers taking the designs to doorsteps.

"It's mostly women folk who do the cooking, in cramped, congested kitchens. According to reports by 'Cookstove Mission', nearly 40 lakh people die globally due to indoor air pollution, and nearly 7-8 lakh people die in India due to the same. That's more than cigarette deaths. Had cooking been a male domain, technology would have innovated it much earlier!" believes Dr Reddy.



Had cooking been a male domain, technology would have innovated it much earlier

## Cos now Put Price Tags on Natural Resources

Practice, called natural capital accounting, will change the way big companies do business

BLOOMBERG  
NEW YORK

Companies are starting to consider the value of natural resources in making business decisions, a practice that will become increasingly important as those resources become further constrained, corporate representatives say. The practice, called natural capital accounting, is a way for companies to accurately assess and manage risk, maintain their social licence to operate, manage or lower operating costs, and secure a competitive advantage, the representatives say.

Increasingly scarce resources, growing competition for those resources, and population growth are some of the factors prompting companies to look at valuing and protecting natural capital, said Denise Knight, sustainable agriculture director for The Coca-Cola Co.

Companies like Coca-Cola are working one-on-one with organisations such as The Nature Conservancy (TNC) and the World Wildlife Fund to assign a monetary value to natural resources, such as clean water, and the services they provide and then use these calculations in making business decisions. Efforts to establish standard methodologies across companies or industries for conducting natural capital accounting are under way, but still in the early stages.

### COCA-COLA INVESTS IN WATERSHEDS

Coca-Cola set a goal in 2007 to replenish all water it uses in finished beverages by 2020. To meet its goal, the company invests in projects to restore watersheds, improve local water use practices to reduce consumption, and other activities, earning watershed credits that are then counted against the volume of water consumed in the company's bottling plants. By the end of 2013, Coca-Cola will be replenishing 42% of the water it consumes, or 67 billion liters (17.7 billion gallons) of water per year, according to the company.

The act of assessing the value of water in addition to the direct cost of the resource is a relatively new practice for the company, Knight said. Coca-Cola is working to understand natural capital accounting and methodologies used to implement it, she said. The company is working with TNC to determine which projects return the most water to watersheds, said Michelle Lapinski, the organisation's director of corporate practices.



Coca-Cola will be replenishing 42% of the water it consumes

### COMPANIES PAY INTO WATER FUNDS

Coca-Cola is also working with the World Wildlife Fund to set up water funds that collect fees from local water users such as Coca-Cola, distilleries, and paper processing mills. The money is used to restore natural systems that produce and filter water upstream, Lapinski said. WWF personnel manage and distribute the funds.

Coca-Cola was also one of the first companies to declare to the Securities and Exchange Commission that water issues pose a material risk to its business, she said. Coca-Cola's water replenishment practices can lead to a lower cost of production, in part because replenishing water may be less expensive than transporting it and treating it, Knight said.

### DOW PLANTS STREETS TO MEET AIR REGULATIONS

Another company engaged in natural capital accounting is The Dow Chemical, which entered into a five-year partnership with TNC in 2011 to assess the value of natural resources at three company sites, including Dow's largest facility, located in Freeport, Texas. The company produces 44% of its US products and 20% of its global products at the site.

The Freeport area is subject to drought, so TNC worked with Dow to improve forecasting models to see how climate change might impact future water supply, Lapinski said. The models are helping the company decide whether it needs to partner with local policymakers or upstream agricultural users to ensure it has a continued water supply, she said.

The site is also subject to limits for emitting certain air pollutants, so TNC and Dow performed a cost-benefit analysis of using scrubbers or doing large-scale restoration of trees to meet the air quality standards, Lapinski said. Researchers found that it was less expensive, but still effective, to restore forests to meet the standards.

### OTHER COMPANIES TAKING ACTION

Other companies doing work on nat-

ural capital include Disney, MillerCoors, Xerox, and Puma.

Disney has committed to fund 6,000 acres of reforestation projects by 2015, not only to lower the company's net carbon emissions, but also to protect watersheds and habitats that wildlife and communities depend on, according to the company. The company plans to conduct a pilot study to quantify the ecosystem benefits and services, beyond cutting carbon emissions, of its reforestation efforts by 2015.

"These goals are rooted in the recognition that a healthy environment is essential to Disney's long-term success," the company said.

MillerCoors is working to improve business practices to protect freshwater, according to TNC. TNC is working with a MillerCoors supplier in Idaho to create best practice farming techniques that conserve water without impacting productivity. The project can then serve as a model for other beer producers, TNC said. SABMiller, MillerCoors' parent company, is also partnering with TNC to start water funds in Colombia, Ecuador, Peru, and Panama.

### QUANTIFYING CARBON EMISSION REDUCTIONS

Xerox is working with TNC to establish a methodology for quantifying carbon emission reductions from improved forest management that can be used by other companies in the paper industry. The tools will lead to a more sustainable paper supply chain and also support local communities, the company says.

Puma published its first corporate environmental profit and loss (EP&L) account in 2011, valuing the annual environmental impact of its business at about \$191 million.

In the past, natural resources were fairly inexpensive for businesses, but that has changed since 2009. Resources are becoming scarcer due to climate change as well as population growth, and this trend will only increase. Businesses will experience a resource crunch as they try to meet that extra demand.



*The Times of India, Delhi, Dated May 11, 2013*

## Green panel wants scanners in scrap mkt

New Delhi: The National Green Tribunal has asked for installation of scanners at the Mayapuri scrap market to ensure that no radioactive waste is stored in the premises.

Hearing a case filed by Nagen-der Deswal against the chief secretary of Delhi, a five-member bench headed by NGT chairperson Swatanter Kumar issued di-

rections that no burning of plastic, tyres or similar waste will be permitted in the scrap market.

"No person shall use any gas or electronic cutters in dismantling of heavy machineries like generators, tankers and transformers etc. No person shall store any e-waste or other materials which are likely to generate radioactivity and pose other haz-

ards to life in particular and environment generally," the order states.

The court has also asked teams from DDA, Delhi government, the municipal corporation, Delhi Pollution Control Committee, Atomic Energy Regulatory Commission and DSIIDC to undertake inspection of the market at regular intervals. **TNN**

*The Times of India, Delhi, Dated May 12, 2013*

# CO<sub>2</sub> level highest in 3m years

*Scientists believe rise is a warning of large changes in climate and sea levels*

Justin Gillis

**T**he level of the most important heat-trapping gas in the atmosphere, carbon dioxide, has passed a long-feared milestone, scientists reported Friday, reaching a concentration not seen on the earth for millions of years.

Scientific instruments showed that the gas had reached an average daily level above 400 parts per million — just an odometer moment in one sense, but also a sobering reminder that decades of efforts to bring human-produced emissions under control are faltering.

The best available evidence suggests the amount of the gas in the air has not been this high for at least three million years, before humans evolved, and scientists believe the rise portends large changes in the climate and the level of the sea.

"It symbolises that so far we have failed miserably in tackling this problem," said Pieter P Tans, who runs the monitoring program at the National Oceanic and Atmospheric Administration that reported the new reading.

Ralph Keeling, who runs another monitoring program at the Scripps Institution of Oceanog-

raphy in San Diego, said a continuing rise could be catastrophic. "It means we are quickly losing the possibility of keeping the climate below what people thought were possibly tolerable thresholds," he said.

Virtually every automobile ride, every plane trip and, in most places, every flip of a light switch adds carbon dioxide to the air, and relatively little money is being spent to find and deploy alternative technologies.

China is now the largest emitter, but Americans have been consuming fossil fuels extensively for

**Every automobile ride, every plane trip and, in most places, every flip of a light switch adds carbon dioxide to the air**

far longer, and experts say the United States is more responsible than any other nation for the high level.

The new measurement came from analysers atop Mauna Loa, the volcano on the big island of Hawaii that has long been ground zero for monitoring the worldwide trend on carbon dioxide, or CO<sub>2</sub>. Devices there sample clean,



© Ryan Fyfe/Corbis

crisp air that has blown thousands of miles across the Pacific Ocean, producing a record of rising carbon dioxide levels that has been closely tracked for half a century.

Carbon dioxide above 400 parts per million was first seen in the Arctic last year, and had also spiked above that level in hourly readings at Mauna Loa.

But the average reading for an entire day surpassed that level at Mauna Loa for the first time in the 24 hours that ended at 8 pm Eastern Daylight Time on Thursday. The two monitoring programs use slightly different protocols; NOAA reported an average for the period of 400.03 parts

per million, while Scripps reported 400.08.

Carbon dioxide rises and falls on a seasonal cycle, and the level will dip below 400 this summer as leaf growth in the Northern Hemisphere pulls about 10 billion tons of carbon out of the air. But experts say that will be a brief reprieve — the moment is approaching when no measurement of the ambient air anywhere on earth, in any season, will produce a reading below 400.

"It feels like the inevitable march toward disaster," said Maureen E Raymo, a scientist at the Lamont-Doherty Earth Observatory, a unit of Columbia University.

From studying air bubbles trapped in Antarctic ice, scientists know that going back 800,000 years, the carbon dioxide level oscillated in a tight band, from about 180 parts per million in the depths of ice ages to about 280 during the warm periods between. The evidence shows that global temperatures and CO<sub>2</sub> levels are tightly linked.

For the entire period of human civilisation, roughly 8,000 years, the carbon dioxide level was relatively stable near that upper bound. But the burning of fossil fuels has caused a 41 percent increase in the heat-trapping gas since the Industrial Revolution, a mere geological instant, and scientists say the climate is beginning to react, though they expect far larger changes in the future.

Indirect measurements suggest that the last time the carbon dioxide level was this high was at least three million years ago, during an epoch called the Pliocene. Geological research shows that the climate then was far warmer than today; the world's ice caps were smaller, and the sea level might have been as much as 60 or 80 feet higher.

Experts fear that humanity may be precipitating a return to such conditions — except this time, billions of people are in harm's way.

"It takes a long time to melt ice, but we're doing it," Dr Keeling said. "It's scary." **NYT NEWS SERVICE**

## Green min does U-turn on Korba plant

Days After Govt's Nod To Project, National Tribunal Quashes Clearance, Calls It Illegal

Nitin Sethi | TNN

New Delhi: Within five days of imposing a moratorium on new industries in Chhattisgarh's Korba district for being the fifth polluted industrial zone in the country, the environment ministry did a U-turn, having cleared a private 3x350 MW thermal power plant. The move overlooks not only the freeze the ministry had imposed, but also the venture is in violation of green norms. Now, the National Green Tribunal (NGT) has quashed the clearance given to

the plant, noting that that the nod was given illegally.

In another case, the environment ministry used a loophole in its moratorium notification to clear a private port project in Maharashtra's Ratnagiri district. After having initially putting the project in abeyance in deference to the moratorium, the ministry hailed the venture to be "of national importance" while giving its approval.

While the second instance has not come in direct violation of the norms, the ministry maneuvered the case around the



ENVIRONMENTAL WOES

moratorium by citing the caveat it had inserted earlier in the freeze order. In its order in 2010,

the ministry had said that projects of public interest like those of national importance, pollution control, defence and security are eligible for approval.

But in case of Korba thermal power plant, the NGT has found that the ministry and its expert appraisal committee cleared the project in blatant disregard to green norms.

The Tribunal noted that the ministry's expert committee had recorded the lack of rehabilitation and resettlement plans for the displaced and warned that it would lead to hardship for

the affected population. Still the panel and the environment ministry cleared the project, couching their argument in "vague and slippery language".

The expert panel did not address the issues that had been raised by the affected lot during the mandatory public hearing. The people had raised concerns of pollution load, damage to groundwater and impact on farmland. The NGT noted that the ministry only dealt with these issues in a perfunctory manner, and didn't bother to address the genuine concerns.

*The Times of India, Delhi, Dated May 13, 2013*



*The Times of India, Delhi, Dated May 15, 2013*

# Warming eats up Everest ice by 13% in 50 yrs

Reuters

Washington: Mount Everest is shedding its frozen cloak as its glaciers have shrunk at an alarming rate of 13% over the last 50 years due to global warming, a new study has warned. Glaciers smaller than one square kilometre are disappearing the fastest and have experienced a 43% decrease in surface area since the 1960s, researchers said.

The snow line has shifted upward by 180 meters, according to lead researcher Sudeep Thakuri, from the University of Milan in Italy. Because the glaciers are melting faster than they are replenished by ice and snow, they are revealing rocks and debris that were previously hidden deep under the ice.

These debris-covered sections of the glaciers have increased by 17% since the 1960s, according to Thakuri. The ends of the glaciers have also retreated by an average of 400 meters since 1962.

The researchers have also been studying temperature and precipitation trends in the area. They found that the region has undergone a 0.6 degree Celsius increase in temperature and 100 mm de-



VANISHING ACT

crease in precipitation since 1992.

They found that the Everest region has been warming while snowfall has been declining since the early 1990s. Researchers suspect that the decline of snow and ice in the Everest region is from human-generated greenhouse gases altering global climate. However, they have not yet established a firm connection between the mountains' changes and climate change, Thakuri said.

Thakuri and his colleagues determined the extent of glacial change in the Everest region by compiling satellite imagery and topographic maps and reconstructing the area's glacial history. #11

*Deccan Chronicle, Hyderabad, Dated May 17, 2013*

# Humans cause global warming: Study

Melbourne, May 16: A comprehensive analysis of 4,000 studies on climate change published over last 21 years has revealed an overwhelming consensus among climate scientists that humans are to blame for global warming, researchers claim.

The study is the most comprehensive yet and identified 4,000 summaries, otherwise known as abstracts that stated a position on the cause of recent global warming — 97 per cent of these endorsed the consensus that we are seeing



human-made, or anthropogenic, global warming (AGW).

The study went one step further, asking the authors of these papers to rate their entire paper using the same

criteria. Over 2,000 papers were rated and among those that discussed the cause of recent global warming, 97 per cent endorsed the consensus that it is caused by humans. The findings are

in stark contrast to the public's position on global warming — a 2012 poll revealed that more than half of Americans either disagree, or are unaware, that scientists overwhelmingly agree that Earth is warming because of human activity.

"Our findings prove that there is a strong scientific agreement about the cause of climate change, despite public perceptions to the contrary," lead author John Cook, from the University of Queensland, said.

— Agencies

*The Times of India, Delhi, Dated May 17, 2013*

# Green min panel bypasses own rules

Allows Mining In Country's Best Sal Forest, Elephant Reserve In Jharkhand

Nitin Sethi | INX

New Delhi: The environment ministry's statutory expert panel, the Forest Advisory Committee (FAC), has bypassed its rules and earlier orders to clear iron mining projects by three private firms in the country's best sal forest and the core zone of the elephant reserve in the Saranda forest division of Jharkhand.

In what could threaten the UPA's much-touted Saranda Development Plan to counter Left wing extremism, the Cabinet Committee on Infrastructure (CCI) — headed by the Prime Minister — has given its stamp of approval to the two firms and now nod for the third company seems like a mere formality.

With the all-powerful CCI and the Jharkhand government on the same page, this could open the floodgates of a gold rush for mineral resources as the state government has prepared a list of 155 mines to be opened in the



800 sq km of prime forestland.

The latest of the three projects to be cleared belongs to Rungta Mines Limited, threatening to ravage the virgin forest land that is nestled between its existing gold mines.

Ironically, Jharkhand government officials spoke in two voices. They noted that the nearby rivers had been

**The Cabinet Committee on Infrastructure headed by the Prime Minister has also given its stamp of approval to two firms and the nod for the third company seems a mere formality. This could lead to a gold rush as the Jharkhand government has prepared a list of 155 mines to be opened in the 800 sq km of prime forestland**

polluted by existing mines in the forest patch located in an "ecologically sensitive zone".

Simultaneously, they argued that the mining project holds the key for "overall economic growth of state and country". In fact, they came up with a "unique" model to enrich Saranda's pachyderm population by diverting

funds from the gains made from mining activities.

Rungta Mines Ltd claims that it has given a jeep to the state forest department as per its demands for conservation and protection of wildlife, besides providing mandatory funds for compensatory afforestation and attendant measures.

The state government officials had given similar self-confounding arguments, while promoting the other two projects. Though they cited that the ventures were located in prime forestland and elephant reserve, there was no hurdle to their clearance.

Saranda, the hotbed of Maoists activities till 2011, was cleared by the paramilitary forces. And, the UPA showcased its Saranda Development Plan as a sure fire way to win tribal hearts and keep the naxals at bay.

It was decided that no private firms would be allowed to mine iron ore from one of the best sal forests, which has also a declared elephant reserve.



*The Times of India, Delhi,  
Dated May 18, 2013*



## SUSTAINABLE TRANSPORT

There is a need to adopt mobility practices which have low negative impact, says **NIKITA PEER**

India's urban population is projected to grow to 533 million by 2025; and the real estate industry is likely to grow by almost 30% over the next decade. Since the housing sector currently contributes up to 6% of the country's GDP and with the National Urban Housing and Habitat Policy stating that at least 50% of the population will live in urban areas by 2041, there is a need to guide sustainable mobility and infrastructure.

Rajat Malhotra, COO (integrated facilities management, West Asia) of Jones Lang LaSalle India, says: "Most people are aware of and worry about the evils of climate change, but do not consider how much motor vehicle use is contributing to it. The future may hold technological solutions to this menace, but

for now the obvious counter-measure is reduced vehicle use."

One of the most progressive concepts to have entered the Indian real estate arena is the integrated township. "Many of the townships taking shape today are centered around manufacturing and information technology hubs. Naturally, they attract home-buyers who are also employed in these centres primarily for the inherent walk-to-work option. Because these townships offer all facilities within their premises, motorized traffic is vastly reduced," Malhotra says.

Developers have tried to retrofit their master plans and incorporate basic sustainable mobility guidelines within their townships to increase pedestrian and bicycle safety, and reduce motor-

ized transport. They have identified key enablers and indicators that could be used as tools for sustainable mobility solutions.

Prakash Shah, director (finance and business development) of a real estate company, says: "When a developer builds a township, he has a long-term vision. There are ultramodern facilities within the township so that the residents do not need to go outside the township for availing various services. Since everything is inside the township, there is no question of travelling too much, thereby ensuring a positive impact on the environment."

New residential developments and townships should aim to retain urban characteristics, prioritize pedestrian and bicycling accessibility and promote mixed-use

developments accommodating the needs of all. "It is important to influence the way we imagine, plan and build our cities and make mobility, especially non-motorized modes and linkages to public transport, an active indicator in new developments," a top official of another realty firm says.

The design of townships should be such that motorized mobility needs be used only on a limited scale. Increased mobility has a huge impact on the environment.

While the concept of sustainable mobility is yet to catch on, the barrier to this concept includes people's reluctance to walk and even use bicycles for short journeys within townships, thanks to their aspirations to own cars and a desire for faster movement.

*Deccan Chronicle, Hyderabad,  
Dated May 19, 2013*

## Hong Kong unveils new electric taxis

**Hong Kong, May 18:** Hong Kong saw its first electric taxis hit the streets on Saturday in a step towards reducing the city's high levels of roadside pollution.

The 45 bright red cars were launched by Chinese electric vehicle producer BYD, which is partly backed by US investment titan Warren Buffett.

Called the **BYD e6**, the five-door crossover sedans are powered by iron phosphate batteries and take two

hours to charge, a statement from BYD said, adding that they can then travel for 300 kilometres.

The cars have been rented by the Hong Kong Taxi and Public Light Bus Association, which is testing them over the next six months.

"The idea of being environmentally friendly is a global trend and the electric car is one good example," said Wong Chung Keung, president and chairman of the association.

"An electric car saves the cost of fuel and will allow our taxi drivers to earn more," he added, saying that a normal taxi would cost HK\$0.8 (10 US cents) to run per kilometre while an electric car would cost HK\$0.2-HK\$0.3.

He called for more charging stations around the city to encourage taxi drivers to go electric — BYD said it is setting up 47 chargers in nine charging locations near car parks. — AFP



People looking at an electric taxi — BYD e6 — on a street in Hong Kong on Saturday. — AFP



*The Times of India, Delhi, Dated May 20, 2013*

# Of Blueprints And Greenhouses

*We can only protect the environment effectively if we take the effort to the people*

Madhav Gadgil



Man is the ultimate toolmaker, moulding the world to his taste. He is also supreme in his ability to elaborate knowledge to manage the world around him. There are two diametrically opposite approaches to this challenge of management; the blueprint approach specifying in detail what should be done, and the greenhouse approach furnishing helpful knowledge, creating enabling conditions and then leaving it to those close to the ground to assess the situation and work out the details.

Our Western Ghats Ecology Expert Panel (WGEEP) embraced the greenhouse, while Kasturirangan's high level working group (HLWG), both set up by the government, adopted the blueprint approach.

The blueprint approach reflects current practices of development by imposition along with conservation by imposition. This creates a dichotomy with reckless development, destructive of nature as well as livelihoods – witness the mining scam of Goa – and thoughtless conservation, as evident by the strident protests against imposition of Project Tiger elsewhere.

WGEEP proposed, instead, a greenhouse approach marrying conservation to development, moving away from the 'Develop recklessly – conserve thoughtlessly' pattern to one of 'Develop thoughtfully – conserve thoughtfully'. This requires the full involvement of local communities in fine-tuning development-conser-

vation practices keeping in mind locality-specific contexts.

The Western Ghats, with their rich natural heritage, high levels of environmental awareness and well entrenched democratic institutions are an especially appropriate region of the country to attempt to make such a transition towards an inclusive, caring and environment-friendly mode of development.

WGEEP's mandate required using the recommendations of the Sen committee set up by the ministry of environment & forests (MoEF) to identify parameters for designating ecologically sensitive areas in India as a starting point. As early as 2000, this committee had called for develop-



This is what conservation by fiat creates

Conservation by imposition is destructive of nature as well as livelihoods – witness the mining scam of Goa – and thoughtless conservation, as evident by the strident protests against imposition of Project Tiger elsewhere

ing a countrywide database of ecological parameters. However, nothing had been done until 2010 when WGEEP commenced such an exercise under adverse circumstances. Astonishingly, the MoEF refused to give us its own Zonal Atlas for Siting of Industries database.

This district-wise database of existing pollution loads, pollution absorptive capacities and possibilities of adding further polluting industries has been sup-

pressed to facilitate further unjustifiable proliferation of polluting industries. The Goa government also refused to give us access to its detailed Google Earth-based database on land use in Goa, evidently because it revealed high levels of illegal mining estimated at Rs 35,000 crore by the Shah commission.

Nevertheless, WGEEP is proud to have developed the first comprehensive ecological database for a large region of the country with very limited time and human resources. This exercise made it clear that the entire Western Ghats region qualifies as an Ecologically Sensitive Area many times over under several of the Sen committee criteria, and therefore it was necessary to label it as such.

Clearly a uniform set of regulations cannot be promulgated for this entire region, and a graded approach, partitioning the Western Ghats into regions of high, moderate and low sensitivity is called for.

Since our National Forest Policy mandates that two-thirds of hill regions should be maintained under forest cover, we suggested that about 60% of the region, including the Protected Areas, should be covered by the zone of high sensitivity, and at least 25% should be set aside as a zone of low sensitivity.

Committed as we were to the greenhouse approach, we did not provide any rigid prescriptions as to the boundaries or the regulatory and promotional activities to be undertaken in any specific locality in these zones. Instead, WGEEP proposed that the final demarcation of the zones and fine-tuning of the regulatory as well as promotional regimes must be based on extensive inputs from local communities and local bodies – namely, gram panchayats, taluka panchayats, zilla parishads and nagar palikas, as was done for Goa Regional Plan 2021 (RPG2021).

RPG2021 involved a compilation of a comprehensive, spatially

referenced database on land, water and other natural resources of Goa state; this information was then shared with all gram sabhas and their suggestions as to the desired pattern of land use obtained, consolidated and used as a foundation for the preparation of the final plan.

WGEEP therefore called for immediately translating its report in all the regional languages, circulating it to all the gram sabhas, obtaining their considered feedback and only then making final decisions in the true democratic spirit.

In its place, the government first suppressed the WGEEP report, and then merely uploaded it on the Web, ensuring that vast majority of the citizens of the Western Ghats could not access it. There were then systematic attempts to mislead people, in particular presenting WGEEP as the ultimate rigid blueprint approach, when it had strongly advocated a greenhouse approach.

Then came the appointment of the HLWG that did not consult WGEEP at all until their work was nearly concluded; that rejected our plea to make the report available in local languages; that held consultations only with netas and babus, and has now come up with a set of completely rigid recommendations that advocate business as usual, with a continuation of the 'develop recklessly – conserve thoughtlessly' pattern.

But not all is lost, and there are welcome signs that the WGEEP report has set in motion a debate that would eventually help us move towards the pursuit of nature-friendly, people-oriented development. So remain full of hope.

*The turtler is an ecologist.*

*The Times of India, Delhi, Dated May 21, 2013*

## 'Global warming to be slower than predicted'

Global average temperatures will rise about 20% more slowly than expected over the coming decades, scientists said. They said there has been an unexplained "standstill" in the heating of the Earth's atmosphere since 1998. This will lead to lower temperature rises in the short-term. Researchers looked at how the last decade would impact the long-term and short-term climate response. They said the projected short-term temperature rise would be 0.9-2.0 degrees Celsius as against the 1-3 degrees Celsius predicted earlier.

*The Times of India, Delhi, Dated May 22, 2013*

## Tree helpline to be back in new avatar

TIMES NEWS NETWORK

New Delhi: The defunct tree helpline will now give way to a more holistic green helpline. The government is pondering changes to the existing set-up to enable a one-number stop for all complaints related to the environment. From July, Delhiites will be able to call this number and register complaints not just about tree felling but unauthorized dumping of waste, throwing garbage into Yamuna and wildlife.

Chief minister Sheila Dikshit, also the environment minister, held a meeting on Tuesday to review the capital's green cover. The review has come in the wake of several reports about the onslaught on Delhi's trees by various agen-

cies, including departments, and directions by National Green Tribunal. Dikshit has asked the forest department to take action in cases where any illegal activity against trees or the green cover is being carried out, even if the offender is a government agency.

The forest department has also been told to keep a close watch on the work of Delhi Metro with around 15,000 trees needed to be felled for its work under Phase-III. Around four lakh saplings have been raised already by the forest department, the survival rate of which is 80 percent. The CM has asked for a comprehensive plantation plan to be drawn up for planting 10-15 lakh saplings across the city during the monsoon season.



**SAVE THE GREENERY:** A fallen tree on Srimant Madhavrao Scindia Marg. Complaints of illegal tree felling in the capital have been on rise



*The Times of India, Delhi, Dated May 22, 2013*

## Tribunal seeks crackdown on units burning plastic

TIMES NEWS NETWORK

New Delhi: The National Green Tribunal has directed Delhi Police to ensure that no burning of plastic is allowed in west Delhi's Mundka and Nangloi villages nor is any plastic waste allowed to be carried out of these areas.

Hearing a case that was transferred to the NGT from the high court, a five-member bench headed by NGT chairperson Swatanter Kumar said that the status report filed by the inspection committee clearly showed "that plastic and other waste is carried out of these areas. Some of the photographs show burning marks on the land. The police officer who had gone along with the other mem-



POLICING PROBLEM

bers of the committee did not even care to collect the sample of earth from the burnt spots which could have clearly shown as to whether the burning at that place was of plastic and/or of any other articles (sic)," said the order.

The bench also observed that two orders had been issued by the high court, one on January 6, 2010 and the

other on August 22, 2012, in which Delhi Police and the local sub-divisional magistrate had been asked to carry out a surveillance of the area and set up pickets to ensure that no waste was carried out of the two villages. It has also asked for action against units where burning of leather and plastic was taking place. "Despite these orders of Delhi high court, the police have failed to discharge their duty... The police shall ensure that no plastic is burnt in that area nor any plastic waste is carried out from that area," says the order.

The lawyer appearing for the applicants in the case said that plastic collection and burning is a regular feature in the Mundka and Nangloi.

*The Times of India, Delhi, Dated May 22, 2013*

## UP pollution panel to monitor industries

Ayaskant Das | TNN

Noida: To ascertain which industrial units in Noida are responsible for causing environmental pollution, the Uttar Pradesh Pollution Control Board (UPPCB) will start a drive this week to monitor effluents and emissions generated by the units.

As part of the drive, samples will be collected from chimney stacks and effluent treatment plants of industries to analyse if emissions are within the prescribed limits. The board, which will moni-

tor 35 industries in the first phase, has undertaken the drive after an order from National Green Tribunal.

Last week the tribunal had directed UPPCB to monitor industries belonging to

### ON NGT ORDERS

'red' and 'orange' categories to determine if their emissions are within set parameters. All 35 shortlisted industries belong to these two categories, classified in accordance with the levels of pollution caused by them.

'Red' category causes the maximum pollution followed by orange and green categories. Officials of the board said that notices will be issued to those industries that are found operating in violation. The detailed reports will also be sent by the board to its head office in Lucknow as well as to the green tribunal.

According to board officials, notices had earlier been issued to industries. "Most industries that had been issued notices have upgraded their pollution control devices," added the official.

*The Times of India, Delhi, Dated May 23, 2013*

## Top hospitals flout waste disposal rules

Neha Lalchandani  
& Ayaskant Das | TNN

New Delhi: The national green tribunal has found that a "majority of the hospitals in the National Capital Territory are not complying with biomedical waste handling rules and are thus posing a very serious hazard threat to human health and environment". These include prominent names such as AIIMS, Safdarjung, Ram Manohar Lohia and Hindu Rao hospitals.

The court had appointed a committee to inspect hospitals, including private ones, in Delhi, Haryana and UP and submit a report on biomedical waste disposal practices being followed. Based on the report submitted in court on Wednesday notices have been served to 33 hospitals in Delhi to take action on the committee recommendations within a month failing which their respective directors and medical superintendent can be prosecuted by Central Pollution Control Board and Delhi Pollution Control Committee.

The tribunal has also di-



BIG HEALTH HAZARD

rected the Uttar Pradesh Pollution Control Board to initiate prosecution against 20 hospitals located in various districts of the UP sub-region, including Noida and Ghaziabad, which were found to be violating biomedical waste handling and management rules.

"We direct that after expiry of four weeks... the joint inspection team of CPCB and DPCC shall inspect all these 33 hospitals and submit a status report with regard to compliance of recommendations of the inspection team," the five-member bench headed by NGT chairman Swatanter Kumar said.

The report submitted by the inspection team identified several issues with the waste management practices of the hospitals. For instance, at Hindu Rao Hospital, the team found that even the biomedical waste was being collected in open trolleys and no colour scheme was being followed to collect this waste. There was no system in place to dispose it as per rules. Similar problems were also found at Safdarjung Hospital, Kalawati Saran Children's Hospital and Lala Ram Swaroop Institute of Tuberculosis and Allied Diseases.

The team said even private hospitals weren't complying with biomedical waste disposal rules. Notices were earlier issued to Max Super Speciality Hospital, IP Extension and Fortis Escorts Heart Institute.

The other Delhi hospitals to whom notices have been issued include Batra Hospital, Holy Family Hospital, Moolchand Hospital, Lady Harding Medical College, Sucheta Kriplani Hospital, St Stephen's Hospital, Sir Ganga Ram Hospital, Rajiv Gandhi Cancer Institute and Research Centre, Maulana Azad Institute of Dental Sciences, Dharamshila Cancer Hospital, Hedgawar Arogya Sansthan and Lok Nayak Hospital.

*Deccan Chronicle, Hyderabad, Dated May 23, 2013*

## 15 GREEN WARRIORS GET JEEVA VIVIDHYA RAKSHAK TITLE

DC CORRESPONDENT  
HYDERABAD, MAY 22

Around 15 environmentalists from across the state were awarded the 'Jeeva Vividhya Rakshak' title for their outstanding contribution to nature by the AP Forest Academy on the occasion of World Biodiversity Day on Wednesday. Among the awardees is Tej Kumar, a retired professor from the city's agriculture university, who spent close to 13 years conserving butterflies and birds.

"Butterflies are good pollinators, and friends of farmers, they take out weeds and save the major crops. There are good indicators to changing of environment. I, along with my team, have set up butterfly parks at Ramoji Film city and Ramanaidu studio. Since 13 years we have been working on the biodiversity of butterflies and identified more than 200 species in AP," he said.

The other awardees include S. Tata Rao from Machilipatnam (conservation of mangroves), Surugu B. from Vijayanagaram (community-based ecotourism), Kantamma from Chittoor (conserving biodiversity) and S. Patel from Adilabad (promoting traditional knowledge in healing snake and scorpion bites).



The Times of India, Delhi, Dated May 24, 2013

**A**run Krishnamurthy, 26, gave up his job with Google to devote himself to the environment. His volunteer-driven group has so far cleaned up 17 lakes across the country. In 2012, he became the youngest recipient of the prestigious Rolex Young Laureate Award for Enterprise for his ongoing project to restore Kilikattalai Lake in Chennai. Krishnamurthy tells Priya M Menon how the youth can become effective agents of change

#### What prompted you to establish the Environmentalist Foundation of India (EFI)?

I started EFI eight years ago while I was still in college, roping in a few like-minded friends to volunteer at Vandalur zoo. When I began working at Google in Hyderabad, I saw that Gurunadham Cheruvu, a lake in Miyapur about 8km from our office, was very dirty. So I approached people staying in nearby apartments as well as school students. On May 30, 2008, around 117 of us cleaned it up. Later on, whenever there was a tree cut down, or an injured animal,

## The man who's cleaning up India's dirty lakes



**CHENNAI**  
**BEACHCOMBING:** Arun (in shorts) with volunteers at Chennai's Ashtalakshmi Temple beach. More than the hard work, he says, it's changing mindsets that's the difficult part

they began contacting us for help. It instilled a sense of responsibility in us and I decided to become a full-time environmentalist. I finally registered EFI in June 2012.

#### How does your organisation work?

We do awareness programmes in schools and enlist volunteers. Most of them are aged 11 to 18. We are a team of 47 in Chennai and 19 in Hyderabad.

#### What is the main thrust of your work?

We conduct lake clean-up programmes across India. We remove garbage, test the water for contaminants and pollutant levels and desilt the lake bed. The silt is used to strengthen bunds. Of the 17 lakes we've cleaned up, five are in Chennai. We also work for sparrow reintroduc-

tion, making nests and putting them up in biodiversity parks. We have also adopted two villages in Tamil Nadu for our 'Green Gramam' project. We introduce sustainable living practices, like waste segregation and recycling plastic waste in these villages.

#### What are the challenges that you have faced?

People suspect that we come with a hidden agenda. For instance, residents of Perumbakkam, who were funding the restoration of a lake nearby asked us for help. But when we approached the panchayat, they wanted to know why we were taking up the work. It is hard for people to digest that we do it for social good. The second biggest hurdle we face is that it is difficult to change people's attitudes. We can clean lakes but people will keep dumping. Whenever I travel abroad, people say India is dirty. But I say India is beautiful; a few Indians are dirty. And I work to change that. The youngsters who work with me are my driving force.

The Times of India, Delhi, Dated May 24, 2013

# UPA's green credentials now muddy

## REPORT CARD: ENVIRONMENT

### THE GOOD

- ▶ Forest Rights Act put in place
- ▶ Solar Mission takes off, other climate change missions worked out
- ▶ After Sariska shock, tiger conservation put back in focus
- ▶ Debate over GM crop/food safety heats up

- ▶ Assessing cumulative impact of projects in an areas not made mandatory
- ▶ International climate policy flip-flops

### THE UGLY

- ▶ Green clearances to mining, industry and other projects given at unprecedented pace

### THE BAD

- ▶ Green India Mission to cover 10 million hectares in limbo
- ▶ Elephant and other species conservation remains low priority
- ▶ Tribal rights over forest produce stuck in controversy

- ▶ Environment violations unchecked as ability to monitor cleared projects remains stunted

- ▶ Regulations rolled back/amended at will to clear projects
- ▶ River cleaning and ground water recharge fail to take off

**UPA @ 9**

Nitin Sethi | TNN

**U**PA's bold rhetoric to push environmental concerns into the battles being waged over India's natural resources ended with a whimper well before the government entered the penultimate year of its second tenure in 2013. The great debate that the UPA held mostly within itself about growth versus development was sparked with Jairam Ramesh taking over the green environment ministry in 2009.

But it hastily went mute within his tenure itself. By the time the UPA had completed its ninth year, it had also turned the clock back on the subject—relegating the environment ministry to a clearance house, like before. It ran up against the government's bulldozing logic of the need to clock higher GDP and unleash the economy's 'animal instincts'. Even the rhetoric was finally abandoned with the government finding itself lacking the will to do more than back the few tokens of its rhetoric, such as an odd Vedanta or a BT Brinjal case.

The government had taken one big, concrete step in its first term—legislating the Forest Rights Act, that too not without the signature self-doubt that has consistently besieged the

UPA. But within a couple of years, the powers-that-be realized that the law not only gave a balancing edge to tribals and 'lower' democratic institutions such as gram sabhas against the powerful conservation lobby, but also against industrial powerhouses.

The same government worked a way around the Act just as earlier regimes had done with PESA, calling it administratively impractical. The new idiom helped take attention away from grim statistics resulting from large-scale allotment of natural resources such as minerals, land and water. The unprecedented industrial growth had taken a toll. The period saw the highest rate of green clearances and the largest swathes of forests being turned over to industry since 1990, when the Forest Conservation Act was enacted.

Says Chandra Bhushan of deputy director general of the Centre for Science and Environment, "Environmental challenges have grown over the nine years, but the capacity of institutions to respond has shrunk in contrast. We have seen disputes over environment increase in the UPA's regime but there is almost no mechanism to resolve these—this is the biggest failure of the UPA's green agenda in these nine years".

*The Times of India, Delhi, Dated May 25, 2013*

# DDA told to come clean on Dwarka water bodies

## Parks Society Asks Officers To Appear On June 4

Neha Lalchandani | TNN

New Delhi: The Delhi Parks and Gardens Society CEO has summoned officials from DDA on June 4 to ask about their plans for reviving and maintaining water bodies in Dwarka. The meeting has been called in response to a story published by TOI on May 22 which highlighted how the land-owning agency was undoing work put in by residents to revive a water body in Sector 23.

"I was informed that the residents didn't receive a favourable response from DDA even after they met the official concerned. Having seen what is being done to this water body by the DDA, I have asked them to prepare an integrated plan on water management for Dwarka. If officials fail to act on this, a complaint against them can be made in the court for violation of its orders," said S D Singh, CEO of the society and nodal officer for work on revival of water bodies in Delhi.

He added that DDA would have to submit a detailed plan with a time frame for revival of each water body in Dwarka. "The fact that the court has not set any deadline for the work has made the land-owning agencies lax. I have asked DDA to give a break-up of each phase under



Dwarka is a parched area and groundwater recharge is possibly the only way to make the area self-sufficient

which they will carry out work."

Dwarka is a parched area and groundwater recharge is possibly the only way to make the area self-sufficient. Diwan Singh from Natural Heritage First, who was part of the team that worked on the revival of the over-

son, they back tracked and insisted on carrying out beautification work that has more or less killed the water body."

The water body was revived through a community effort in 2012. Before that, the pond was dry for most part of the year or filled with sewage. Its ownership was transferred to DDA in 1984 at which point the water was still quite clear. After 1984, however, its condition deteriorated rapidly due to flow of sewage into it and its area shrunk considerably. This year, DDA decided to desilt the water body and in the process, it managed to put the silt back into the pond, close down rain water carrying channels created by residents and reduce its area.

### TIMES IMPACT

200-year-old water body in Dwarka said, "All water bodies should be preserved and revived as they offer an excellent platform to recharge ground water. This is especially true for area like Dwarka where there is barely any civic supply. Earlier, DDA was receptive to our proposal for involvement of residents in the pond revival exercise but for some rea-

*Edited by: Prof. Sushil Kumar  
Centre for Business Sustainability,  
IIM Lucknow*